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THE TREATMENT OF THE ARTHRITIDES*

L. LITCHFIELD, M.D.
PITTSBURGH

It is natural that diseases the most obvious features of which are located in the joints should be grouped together just as diseases of the meninges, lungs, gastro-intestinal tract, etc., are grouped. While we recognize the basis of classification in the other classes and realize that the diseases may have nothing in common, except the localization of some of their phenomena, in the case of the joints we have not yet progressed so far. No class of cases seems to offer greater facilities for study and treatment, and yet in the mind of the average practitioner everything, except the typical cases of rheumatic fever, is thrown into a nebulous class of chronic, rheumatic, rheumatoid or gouty arthritis, the treatment of which is almost hopelessly chaotic. Since Sydenham differentiated acute rheumatic fever from gout, little progress has been made, speaking for the profession at large.

This confusion of ideas with the consequent therapeutic failures is the natural result of certain conditions of which I shall consider the three most important:

1. The unfortunate persistence and extension of the term rheumatism without any definite significance. The permutations and combinations of this term "rheumatism" have contributed so much to misunderstanding, to lack of precision in diagnosis, and consequent lack of definite aim in treatment, to confusion of diseases and confusion of ideas as to the cause, relationship, and management of diseases that it would be far better to drop the term altogether, using the name "rheumatic fever" instead, and ringing no changes on that term, like rheumatoid, gonorrheal rheumatism, rheumatic affections, etc.

2. The flooding of medical literature year after year, under authoritative names, with obsolete, misleading, and unnecessarily confusing statements merely because they are traditional and because the publishers must have filling for their new books. If writers would boldly leave the legendary and condense their writing to what is known, our horizon would soon be much clearer and our book-shelves less congested with crops in which the tares outweigh the corn. One can only vaguely imagine the time that would be saved.

I have long been of the opinion that this evil is largely the result of the energy and enterprise of our medical publishing houses. Where we need one publishing house, we have six or eight. All must keep busy continuously or they will lose money. Therefore, they must coerce the medical profession into writing and buying this unnecessary mass of stuff. If one publisher gets out a book on therapeutics, immediately the others try to duplicate it and we get possibly three or four thousand pages of the printer's art, when two or three hundred pages would give all that is new and worth reading.

3. The paucity of our knowledge as to the etiology of the pathologic conditions observed in the joints. But do the current works on diagnosis, dietetics, and treatment adequately reflect the present state of our knowledge regarding these subjects? Let us consider for a few moments this important question. I assume that the following definite facts and principles may be regarded as established or at least as accepted by investigators as working hypotheses. Exclusive of trophic, hemophilic, traumatic and certain septic cases, the arthritides may be divided into three classes—rheumatic fever, gout, and hypotrophic and hypertrophic arthritis.

1. As to the nature of gout, this disease is due to the abnormal accumulation of uric acid in the system, resulting from its increased production, diminished destruction, or faulty elimination; to the change of the monosodium urate circulating in the organism, from a soluble to a less soluble isomeric form, and its precipitation in the tissues.[1] This uric acid is no longer regarded as a stage in the production of urea, but as a natural end product of purin metabolism, resulting about equally from endogenous and exogenous sources. Consequently, the amount of uric acid to be disposed of may be cut down 50 per cent. by a purin-free diet. I think it is safe to say that nothing in dietetics is so well established as the indication for a purin-free diet in gout. This indication is even more exacting than that for a low carbohydrate diet in diabetes mellitus. For we must try as far as possible to increase the tolerance for carbohydrates in diabetes, but there is no such pressing therapeutic reason for trying to increase the tolerance for the purin bodies in gout.

2. The fact that what is designated as "rheumatic fever" or often as "acute rheumatism," "polyarticular rheumatism," or just "rheumatism" is a general infection, whether we regard the so-called *Streptococcus rheumaticus* of Poynton and Paine as the cause or as an attendant phenomenon like the streptococcus blood-infection in most cases of scarlet fever[2] and many cases of measles[3] and small-pox.[4]

3. The disease or diseases commonly called arthritis deformans and rheumatoid arthritis or hypertrophic and hypotrophic arthritis—whether we regard these two very different pictures as different manifestations of the same, or as two distinct diseases—are not closely related etiologically either to gout or to rheumatic fever.

*Chairman's address before the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Gudzent: Ztschr. f. physiol. Chem., lv, 38; Therap. d. Gegenw., December, 1910; Med. Klin., 1909, No. 37.
2. Moser: Brit. Med. Jour., Oct. 4, 1902.
3. Cornil and Rabes: Traité de méd., ii, 84; Garre: Fortschr. d. Med., 1885, p. 165; Councilman: Jour. Med. Res., 1904, p. 1.
4. Park: Pathogenic Bacteria and Protozoa, 1890, p. 434.

4. The only agent that has been scientifically proved to increase materially the elimination of uric acid without correspondingly increasing its production is radioactivity.

5. Excess of sodium in the tissues predisposes to gouty deposit of sodium urate, and therefore in the so-called gouty diathesis the administration of hydrochloric acid is more logical than the alkaline treatment.

6. Doubtful or atypical cases of gout can be diagnosed only by scientifically testing the capacity of the organism to eliminate uric acid or by the demonstration of the presence of uric acid in the circulating blood, the latter being of value in rare cases only.

7. There is no such thing as an antirheumatic diet and all patients suffering from chronic arthritis, except the gouty, should be as generously nourished as their digestive capacity will permit.

8. Many cases of arthritis are unfavorably influenced by septic foci, as pyorrhea, infected tonsils, antra, frontal sinuses, ethmoid or sphenoid cells, prostate, etc. In certain cases these foci may be ports of entry of the disease germs or sources of the toxins which cause the irritation in the joints.

With the facts just given, let us contrast the following extracts from some of the latest and most popular books of reference, by which many of us shape our daily management of cases. In a reference system published within ten years, an imposing article on dietetics prescribes the same diet for chronic rheumatism, gout and various skin affections. In one of the latest and most popular systems published in England during the last three years appears a very good article on gout, but there is no mention of purin metabolism in its relation to gout, and no mention of radio-activity; diet tables which are worse than useless are included.

In a "thoroughly revised" edition of a standard work on dietetics published within three years, we read under "gout": "Take moderate quantities of plain nutritious food, avoid excess of meat, and all rich food, and eat only moderate quantities of starches and sugars." This is advice better adapted to almost any other condition than to gout. Then follow detailed directions for all kinds of meats, meat soups, etc., with a caution as to eggs, and an injunction against dried beans or peas, sweet potatoes, beets, ice-cream and cheese, all of which are really harmless in gout, as compared with meat and meat soups, which the author allows.

In another recent system on therapeutics we read under "hydrotherapy" that in the treatment of gout and rheumatism by baths it is simply a question of temperature, duration and pressure (no mention of radio-activity), and further that in all cases of "rheumatic" and "gouty" character the patients should be subjected to hydrotherapy early, medication being practically useless except as a palliative. It is exceedingly common to find these words "rheumatic" and "gouty" linked together, and it adds greatly to the existing confusion.

In the same system we find in an article on "Diet in Gout" a glimmering suggestion as to the relation of purin bodies to uric acid, but this idea is not carried out in the diet tables which follow. In a paragraph on "rheumatic headache" the writer says that this may be (1) "a simple localized affection" or (2) due to "lithemic toxemia, an auto-intoxication from the disturbed gastro-intestinal tract," or (3) to congestion of the tonsils and pharynx. "The local condition may be the result of exposure to cold, sudden checking of the perspiration or the gradual accumulation of the so-called 'rheumatic poison' in the system, from lack of exercise, overfeeding and the use of alcohol." The author then recommends salicylates, colchicum and the iodids — a meaningless jumble of words followed by a shotgun prescription.

In one of the most popular new systems a writer says that there are three varieties of joint affections in typhoid fever, i. e., rheumatic, septic and typhoid proper! and this brilliant classification has been copied year after year by one hurried writer after another. A celebrated English authority contributing to this same system says: "Gout and rheumatism are two diseases which are usually attributed to imperfect tissue metabolism, although there is a tendency, in the case of rheumatism at least, to transfer this disease to the class of infectious diseases." He goes on to sanction the use of alkalies in both cases as favoring the action of oxidases and raising the bactericidal power of the blood. He does not distinguish between the use of salicylates in gout and in rheumatism, saying that they increase the solubility of uric acid. He favors, for reasons which are not given, the use of piperidin, piperazin, etc. Later the same author says: "In cases of disease of the nerve trunks, the treatment resolves itself into the use of electricity and the administration of remedies intended to counteract rheumatic or gouty tendencies, such as alkalies, potassium iodid, salicylates, antipyrin, phenacetin, aspirin, guaiacol, etc."

The one thing which has proved to be of any scientific value in gout is not mentioned in these two large volumes. Such writing shows the same scattering footlessness and rambling lack of scientific foundation as the second-rate proprietary literature with which our offices are flooded; and this stuff is sold to students and practitioners under the authoritative names of men who know better. Should men allow articles which they have never read to be sold as edited by them? Can it be imagined that the alleged editors read these bulky volumes? Is it any wonder that chaos exists in the minds of the profession when our idols are selling us advice which they themselves have never read? Another evil of these pot-boiling "systems" is that they are full of contradictions, no attempt being made by the editors to see that the various authoritative contributions should not flatly contradict one another and leave their readers in the air. Such a collection does not make a system — it is merely a job-lot of medical articles.

If a man reads a monograph he chooses a writer in whom he has some confidence or of whom he knows something. When a man buys a system he is influenced by the names of the editors. He has a right to feel that what he reads in the said system has the sanction of the editors. In the majority of cases he does not even notice who has written the particular article to which he turns for help in time of need. It is time that those who have deservedly won positions of authority give more careful consideration to that which is going to be sold under their names.

Now, to come back to our classification, I wish to refer particularly to certain points in the treatment of these conditions.

RHEUMATIC FEVER

There is abundant clinical evidence that salicylic acid is specific for rheumatic fever and for that disease only. I could cite Kraus of Berlin, Rolleston of England, and many others in support of this opinion. As with other chemical remedies, the treatment should be so managed as to overwhelm the disease as soon as possible and not

by small doses long drawn out create a tolerance of the disease-producing organisms for the remedy and at the same time an intolerance of the patient's stomach. Professor Kraus gives 0.5 gm. of salicylic acid hourly day and night until improvement begins, sometimes even to thirty-six hours. The heart and urine should be carefully watched and the treatment should be changed if cardiac depression or albumin and casts are recognized. Following Kraus, I have used some recent synthetics for the past two years whenever the least irritating form of salicylic acid was indicated, and I have been well satisfied with the results.

The combination of alkalies with the salicylic acid treatment of rheumatic fever receives much support from statistics and theoretically at least there are no contra-indications. It is also said to protect the kidneys from the irritating effects of salicylic acid.

The use of vaccines in cases of rheumatic fever as well as in cases of gonorrheal arthritis has been favorably reported on too often to be ignored. Personally, I have had very satisfactory results in both diseases.

In Pittsburgh Drs. Ernest W. Willetts and W. R. S. Denner have cultivated four strains of streptococcus, believed to be identical with that described by Poynton and Paine. Three of these cultures were obtained from blood of patients with acute rheumatic fever and endocarditis. These could not have been terminal infections, as all recovered. One was a culture from the pericardium of a subject who died of chorea with pancarditis. About twenty-five patients have been treated with vaccines made from these cultures, with very satisfactory results. The twenty-five cases include acute and chronic rheumatic fever, chorea, and rheumatic iritis and iridocyclitis. The only patients not benefited were those in whose cases the diagnosis was doubtful.

At all stages of the disease the diet in rheumatic fever should be the most nutritious that the patient can take care of.

CHRONIC HYPOTROPHIC AND HYPERTROPHIC ARTHRITIS

The toxic and septic cases referred to above are most commonly called rheumatoid arthritis (following the English) and arthritis deformans. The diagnosis of the acute manifestations of these two types of disease is sometimes difficult or even impossible in the present state of our knowledge. As to their treatment, possible source of infection should be sought for and removed, though I must say that I have never seen the brilliant results follow the removal of these septic foci that have been reported by others. Still I have several times seen acute exacerbations of the joint affections immediately follow operations on tonsils, antra and appendix. Whether these joints should be exercised or not may sometimes be determined by a study of their radiograms.

The most important point which is not sufficiently recognized is that the patients should be treated along the lines of any chronic infection, that is, by the greatest possible amount of food and outdoor living and sufficient rest to insure the building up of the reserve forces. Many of these patients are very anemic and iron and arsenic are indicated. Care should be taken, if iron is needed, to give enough and to give it in the best form. Shirokauer's recent exhaustive, interesting and instructive article[5] on the use of iron may be referred to here. There is considerable evidence in favor of the use of fibrolysin in certain of these cases to increase the mobility of the joints where the loss of motion is not due to bony changes.[6]

As will be seen later, a certain proportion of these patients have been greatly benefited by treatment with radium emanations.

GOUT

Gout is probably far more common in the United States than is generally supposed. For some reason, not yet explained, the typical cases are relatively infrequent, but I believe that a very large number of atypical cases are overlooked. Although the positive diagnosis of these atypical cases can only be made by testing the purin metabolism or by finding uric acid in the blood (and according to His[7] and Magnus-Levy[8] the former test is sometimes negative in undoubted cases of gout), still a careful consideration of the family history, the patient's previous history and the existing conditions will usually give us sufficient indications for a tentative use of gouty remedies.

The value of colchicum to control the acute symptoms of gout is too well known to require comment.

As regards the influence of alkalies and acids in gouty conditions, there have been a series of very interesting reports which seem to demonstrate that alkalies, particularly sodium,[9] diminish the solubility of uric acid in the blood, and that the administration of hydrochloric acid seems in some way to diminish the alkalinity of the blood, rendering it thereby more disposed to take up the sodium from synovial fluids, etc., where its presence favors gouty deposits. The stronger affinity of hydrochloric acid for sodium prevents the latter from uniting with uric acid.[9] The most interesting articles along this line have been by Falkenstein,[10] Brugsch,[11] van Loghem and Cohn.[9] The practical deduction from the foregoing is the limitation by gouty patients of the ingestion of such vegetables as are high in sodium, and the administration of dilute hydrochloric acid in water or lemonade.

One of the most progressively interesting lines of metabolic work during the past few years has been the development of our knowledge of the therapeutic effects of radium. This subject has received very little notice in America, but for the past two years the German journals have been fairly teeming with it. The reports of forty investigators might be cited from the German medical journals. The British medical press is beginning to notice with enthusiastic approval this German activity.[12] During the past two years there have been seventeen references to radium in British medical literature, eight in the United States, four in Canada, and one in Australia. Most of the notices outside of Germany have been abstracts of or comments on the German work. At the thirty-second Balneologic Congress held in Berlin in March, 1911, one whole session was given to the consideration of the therapeutic effects of radium.[13]

When radio-activity was discovered in the waters of various popular springs, it was at once suspected that this radio-activity might be the essential therapeutic

5. Shirokauer: Abhandl. a. d. Geb. d. Verd. u. Stoffwechsel Krankh., I, No. 3.

6. Mendel, Felix: Deutsch. med. Wchnschr., 1911, No. 3.
7. His: Berl. klin. Wchnschr., 1906, No. 46; 1907, No. 35; 1908, No. 3; 1910, No. 7; Med. Klin., 1910, No. 16; Deutsch. med. Wchnschr., 1911, No. 5, Vereinsber.
8. Magnus-Levy, A.: Zur Diagnosis der Gicht a. d. Purinstoffwech., Deutsch. med. Wchnschr., 1911, No. 17.
9. Cohn, S.: Deutsch. med. Wchnschr., 1911, No. 10.
10. Falkenstein: Deutsch. med. Wchnschr., 1911, No. 9, Vereinsber.
11. Brugsch: Der Nukleinstoffwechsel u. seine Storungen, Brugsch und Schittenhelm, Jena, G. Fischer, 1911.
12. Brit. Med. Jour., Feb. 4, 1911, p. 267 (editorial).
13. München. med. Wchnschr., 1911, No. 12.

feature of the springs. Roughly speaking, it was noticed that the springs which seemed to have been the most successful in the treatment of gouty conditions were those which showed the highest radio-activity. Artificially prepared radio-active waters were then experimented with and seemed to show the same therapeutic effects. Animal experiments (His,[7] Kionka,[14] Cohn,[9] Fofanoff[15]) were then undertaken with radium, with the result of demonstrating that the action of radium, therapeutically used, is elective, affecting most the embryonic tissue (the ectodermal tissue), the pathologic tissue of tumors, etc.; that it attacks foreign bodies such as uric acid which has been artificially introduced under the skin or in the peritoneal cavity; that it modifies the phenomena of inflammation and stimulates the action of various ferments as the pancreatic, peptic and lactic acid, and the autolytic ferment in the tissues.[16]

From experiments on man, it was found that radium emanations have no action on the glycolytic ferment in diabetic cases, and no action on the elimination of purin bodies in normal cases, but an accelerating effect on the elimination of purin bodies in gouty cases in which the elimination is delayed. It prevents the rapid change of urates circulating in the organism from a more soluble to a less soluble isomeric form and even reverses that change.[1, 15] It increases the elimination of uric acid as well as its destruction into ammonia and carbonic acid.[1] It increases the general metabolism.[17] It increases the chemotaxic and phagocytic properties of the white blood-corpuscles (Fofanoff). At the various cures, the radium emanations find their way into the organism by inhalation, by penetration through the skin, or by the drinking of the radio-active water, and much has been written as to the relative merits of these different methods.[18, 19]

The most recent method of using radium in these cases was proposed and developed by Felix Mendel[20] of Essen. It consists in the intramuscular injection of a radio-active liquid of standardized strength. By this method Mendel has obtained very definite results in cases of gout, also in certain cases of chronic arthritis. This seems to confirm the statement of Minkowski, in his classic work on gout, that there is a close relationship between gout and certain cases of chronic atrophic and hypertrophic arthritis.

Of the many clinical reports of the application of radium to cases of arthritis, and to the so-called gouty diathesis, His[7] has given us the largest series of cases, including twenty-eight cases of gout and one hundred cases of chronic arthritis. Of the twenty-eight cases of gout, four were not improved, twenty-four were considerably improved, several without return of symptoms for one year up to the time of writing. Many of these patients had tried severe dietetic and other measures without benefit, and three patients had been on rigid purin-free diet for some time without benefit until the radium treatment was begun. His observed the disappearance of tophi in two cases, and some cases were clinically much improved, although uric acid persisted in the blood, while rare cases showed many tophi with repeated gouty attacks and no uric acid could be demonstrated in the blood. Of the one hundred cases of chronic arthritis, forty-seven were improved, twenty-nine much improved, five almost cured, thirteen showed no change that could be attributed to the treatment, and six cases could not be followed. The best results were in the more acute or earlier cases, especially in young subjects. Gudzent,[1] Brugsch,[11] Strasburger,[21] Mendel,[20] Fürstenberg and Klemperer,[22] and Kemen,[23] have all recorded similar results.

In this brief reference to the effects of radium on certain pathologic conditions, enough has been said to show the desirability of having an official investigation and standardization of the most important American springs in regard to their radio-activity, and I should be very glad to see a recommendation to this end from this Section to the House of Delegates.

5431 Fifth Avenue.

Note.—In addition to the articles previously cited, the following references will be found of interest:

Wichmann: Radium in der Heilkunde, Leipsic, Leopold Voss, 1911.

Lazarus: Radiumemanation, Deutsch. med. Wchnschr., 1911, No. 18, Vereinsberichte.

Eichholz: Ueber Aufnahme and Abgabe von Radiumemanation, Deutsch. med. Wchnschr., 1911, No. 18.

London, I. S.: Das Radium in der Biologie und Medizin, Leipsic, Akad. Verlagsgesellsch., 1911.

Eichholz: Absorption der Radiumemanation im menschlicher Körper, Deutsch. med. Wchnschr., 1911, No. 3.

Sommer, Y.: Heilquellenactivität, Schweiz. Cor. Bl., 1910, No. 6.

EXPERIMENTAL INTESTINAL OBSTRUCTION

REPORT OF FURTHER PHYSIOLOGIC, CYTOLOGIC AND CHEMICAL STUDIES *

JOHN WILLIAM DRAPER, M.D.§
ROCHESTER, MINN.

In general, those things which we see in mass are most certain to fix attention. The mucous lining of the dog's small intestine spread over 3 meters of tubular surface is more apt to be thought of in microscopic than in macroscopic terms. Possibly this is why certain of its functions relating to the animal economy may have been overlooked. Yet, in weight and, as some believe, in metabolic importance of secretions, it is the analogue of other great glands of the body. Its weight ratio to the thyroid is about as 7 to 1, and to the pancreas as 3 to 4. Its part in the balancing of metabolism has been overshadowed by its more obvious though measurably less important digestive function. It differs from other glands, not alone in its tesselated length, but in having a less free vascular interchange throughout its long course. What peculiar conditions as to function do these morphologic characteristics impose? If any, are they of significance in the perverted condition following intestinal obstruction?

On the other hand, take a spherical gland like the thyroid, for example; how are its cells activated to like function in like time? What more convenient method than by the interwoven blood-stream with its hormones and varying coefficients of osmotic pressure? How different seems the arrangement of the intestinal mucosa!

14. Kionka: Die Radioaktivität der Mineralwasser, Deutsch. med. Wchnschr., 1911, No. 17.
15. Fofanoff: Ztschr. f. klin. Med., lxxi, Nos. 3-6.
16. Loewenthal and Wohlgemut: Biochem. Ztschr., 1909, p. 476.
17. Silbergleit: Berl. klin. Wchnschr., 1909, No. 26.
18. Strasburger: Behandlung mit Radiumemanation, München. med. Wchnschr., 1911, No. 15; Deutsch. med. Wchnschr., 1911, No. 17.
19. Loewenthal: Deutsch. med. Wchnschr., 1910, No. 44, "Ueber Nessmethoden u. Einheiten in der Biolog. Radiumforschung.
20. Mendel, Felix: Die Emanationstherapie mittels intramuskularer Radiogen Injectionen, Deutsch. med. Wchnschr., 1911, No. 5, Vereinsber.
21. Strasburger: Deutsch. med. Wchnsch., 1911, No. 12; München. med. Wchnschr., 1911, No. 15.
22. Fürstenberg and Klemperer: Deutsch. med. Wchnschr., 1911, No. 5, Vereinsber.
23. Kemen: Gicht u. Radiumtheraple, Petersb. med. Wchnschr., 1911, No. 13.

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* From the Laboratory of Surgical Chemistry and Physiology, Rochester, Minn. Continuation of studies begun at Columbia University, New York, and reported before the Johns Hopkins Medical Society, March, 1909. (Am. Jour. Med. Sc., May, 1909.)

§ J. W. Draper Maury has taken the name John William Draper

From these epithelial cells we know that the blood carries certain bodies which stimulate certain secretions.[1] This is a recently acquired habit and a highly specialized function, though older and less specialized than either sympathetic or central nerve control. Blood-stream messengers were doubtless used by our acardiac ancestors, for Draper[2] demonstrated nearly seventy years ago that hearts were a secondary contrivance and quite unnecessary to the maintenance of circulation. A more remote ancestral method of interglandular communication may have been the bathing of one pavement cell by the secretion of its next fellow. This method of stimulation in vertebrates is universally recognized in the activation of trypsinogen by enterokinase. Do not certain other substances follow the path of habit and of least resistance through the intestinal lumen? Surely, the experimental studies of Roger,[3] Matthews[4] and Pilcher[5] as well as our own, suggest this view. Furthermore, what other significance is to be attached to the terminal arrangement of the circulation in the small intestine? Free and lavish as is this blood-stream, its

Fig. 1.—Animal in late hours of untreated duodenal obstruction. Posture is due to tonicity of hind leg muscles. Often walk on hind toes. Tendon reflex exaggerated.

avowed architectural plan seems throughout the vertebrates merely for the purpose of hastening great volumes of blood to and from the intestine at the digestion period. Direct vascular interglandular communication appears minimized—definite lateral communication must have been provided had it been found functionally advantageous or necessary.

Embryologically, as Schulz[6] says, the analogues of the digestive tracts of the higher forms are first met with in mollusca. This relationship must not, however, be thought of as too close, because, among other things, so important an element as pepsin, for example, has not yet been positively identified in the invertebrates. It is significant, however, and germane to a study of obstruction that the great mid-gut gland of molluska, although it contains glycocoll and is commonly looked on as liver, partakes at least as much of the nature of the vertebrate pancreas as of liver. Necessarily, being the chief organ both of assimilation and of digestion, it also functionally resembles our own highly specialized intestine. Originally there existed a free channel of communication between the cells of this gut-hepato-pancreas—a sort of general cellular washway. In vertebrates, however, a wide anatomic separation of the gland units (the liver and pancreas) with resulting ducts, has restricted the primitive method of cell-bathing to the intestine alone.

These abstract considerations are valuable because of their vital importance in every-day work. If we would seek for the cause and relief of human ailments, recourse must be had for intelligent hypotheses, not in purposeless leaps in the dark, but in the friendliest possible adaption of both our phylogenetic and ontogenetic evolution to experimental thought.

Fig. 2.—Relaxed hind leg of duodenally obstructed dog. Note that toes are together. Hand grasping thigh, gently.

The belief that death in duodenal obstruction is caused by the actual interruption of enteric exchange thus seemed logical. What had been put together through untold ages of striving by millions of ancestral species could not without quick fatality be rudely set apart. Walter Cannon, in a personal note, justly complains that certain of us have too long looked on the alimentary canal as a highly ingenious contrivance of rubber tubes to be spliced and lopped at will. In the same connection, Pavlov[7] says, "The digestive process is a synthetic construction, all parts of the organism working together." The human animal in altruism and in intelligence surpasses all others. Physically, however, even

1. Bayliss and Starling: Chemical Regulation of the Secretory Process, Proc. Roy. Soc., 1904, lxxiii, 310.
2. Draper, J. W.: The Chemistry of Plants, 1845, p. 37.
3. Roger, H.: L'occlusion intestinale, Presse méd., Jan. 4, 1911, p. 1.
4. Matthews, S. A.: One of the Functions of the Duodenum, THE JOURNAL A. M. A., July 23, 1910, p. 293.
5. Pilcher, J. T.: Cause and Relief of Pain in Duodenal Ulcer, Am. Jour. Med. Sc., 1911, cxli, 687.
6. Schulz, F. N.: Handbuch der Biochemie (Oppenheim), iii, Part i, 228.
7. Pavlov: Work of the Digestive Glands, p. 167.

among the invertebrates, as Schaler[8] says, man has many superiors. His glandular functions, as shown by Starling,[9] are as subject to the first-formed primitive influences as are those of any other vertebrate. How close is the relationship between biology and executive medicine! Finney's[10] conclusions as to the fundamental importance to surgery of a biochemical rather than a purely mechanical interpretation of the problems of gastro-intestinal perversions, are certainly pointed and timely.

It was not then by fortuitous guess that we began to feed the mucosa of the jejunum and ileum of one dog into the stomach and short intestinal segment of a duodenally obstructed dog. A reestablishment of the hypothetic simple signals of our primitive ancestors by

Fig. 3.—Spasm of leg shown in Figure 2, caused by pressure of fingers. This can be produced in normal dogs, but not so constantly. Toes separated.

putting together what the obstruction had taken apart should theoretically restore physiologic equilibrium and thus delay death. In a measurable degree this proved true.

Is there anything new under the sun? That the ancient Greeks attached a high sacrificial value to the entrails is humorously suggested by the following lines from Homer:[11]

"They taste the entrails* and the altars load
With smoking thighs."

This method of epithelial medication has in part answered the question suggested by earlier studies, "Does the intestine detoxicate by the addition of an anti-enzyme or does it save life by offering a larger field for absorption?" It is also germane to Bolognesi's[12] thoughtful studies on the chemistry of the blood in intestinal obstruction.

As in the case of delayed chloroform poisoning, the muscular twitchings spoken of by Howland[13] and Whipple[14] were good clinical evidence of the degree of obstructive toxemia.

The posture which was due to the tonic spasms of the hind extremity muscles was frequently characteristic. So also was the carriage of the hind leg in walking. It is not unlike the swing of paraplegia in man. If death be due to glandular inactivation, the various coefficients

TABLE 1.—SERIES A; DOGS FED MUCOSA*

NO. OF DOG	AVERAGE PULSE RATE	HRS. LIVED AFTER OBSTRUCTION	REMARKS
6	---	120	First dog fed Mucosa;only moderately sick.
8	---	127	Moderately sick.
20	148	103	Animal was a pup seemed resistant to toxemia,rapid emaciation.
40	146	174	Operated on at end of168 hrs.for gastro-enterostomy. death in 6 hrs.
45	114	102	Operated on at end of 96 hrs. for gastro-enterostomy. death in 6 hrs.
49	160	120	Pulse rose from normal to 180 in 15 hrs. Animal very toxic.
63	144	127	Peculiar condition:abduction of outer toe clonic spasms,rapid emaciation.
72	123	163	Operated on at end of 6th day for gastro-enterostomy. died in 19 hrs.
75	140	180	Mucosa stopped at end of nine days Spontaneous intestinal fistula.
78	109	150	Very marked muscular tremors.
94	140	102	Condition very good throughout.
99	138	118	Condition good up to last 24 hrs. when marked tremors began.
112	128	57	Very marked tremors.condition good.
116	151	102	No tremors but marked rigidity of hind-quarters.
117	146	102	Condition good but animal extremely weak.

13 | 1787–15 | 1847

137 Av. P. — 123 = Av. length of Life when Fed Mucosa

* In several animals a late gastro-enterostomy was made in hope of saving life. Futile because too much toxemic damage had already been done.

of the pulse should afford reliable measures of the intoxication, for Rogers,[15] quoting Loeb, thinks that the heart-beat itself may be due to enzyme action. Adult dogs seem to have as unstable thermo-dynamics as young humans.

Hence, the rectal temperature has not appeared to be a reliable guide. It was usually but little changed by uncomplicated duodenal obstruction. Length of life, measured in hours after obstruction, obviously afforded the surest index of the efficacy of any form of treatment.

8. Schaler, N. S.: The Individual, p. 126.
9. Bayliss and Starling: Uniformity of Pancreatic Mechanism of Vertebrata, Jour. Physiol., March 16, 1903, p. 174.
10. Finney, J. M. T.: Some Problems in Gastro-Intestinal Surgery, THE JOURNAL A. M. A., June 3, 1911, p. 1625.
11. Homer: Odyssey, Book iii, line 12.

* Presumably the liver and heart.

12. Bolognesi, Giuseppe: Recherches physico-chimiques du sang dans l'occlusion intest. exp., Jour. de physiol. et path. gen., March 15, 1911, xiii, No. 2.
13. Howland and Richards: Jour. Exp. Med., 1909, ii, 344.
14. Whipple, G. H.: Chloroform Poisoning, Liver Necrosis and Repair, Johns Hopkins Hosp. Bull., xx, No. 222.
15. Rogers, C. G.: Am. Jour. Physiol., xxviii, No. 3.

METHODS

Two series of fifteen dogs each have been prepared as follows: Under profound ether anesthesia in each case, the duodenum has been sectioned and infolded just aboral to the major pancreatic duct. All animals were treated exactly alike as regards dressings, postoperative care and free access to water. In Series A, however, each dog was given by mouth four times daily, about 30 c.c. of a watery suspension of mucous membrane scraped from the jejunum and ileum of healthy dogs which had been sacrificed by chloroform for the purpose. Approximately 400 c.c. of water were added to the entire scrapings and it was found that this suspension would keep on ice for about five days. No effort at standardization was made, but it was early observed that immediate treatment seemed more important than size of dose or later treatment.

One is tempted to speculate on the fate of numerous colon bacilli thus transplanted to unusual regions from the terminal ileum. Surgical introduction of such bacteria by implantation of a segment of the bacillus-bearing ileum into the duodenum had no visible clinical effect on two healthy dogs.

TABLE 2.—SERIES B: DOGS NOT FED MUCOSA*

NO. of DOG	AVERAGE PULSE RATE	HRS. LIVED AFTER OBSTRUCTION	REMARKS
1		60	Characteristic attitude of obstructed dog
2		72	
18	168	54	Characteristic attitude.
55	171	54	Tremors, high pulse, rigidity very marked.
57	175	126	Pulse high and rapid, animal very reslctant to toxemia.
58	162	90	Marked rigidity and rapid pulse.
70	146	103	Marked tremors, spasticity violent reaction 14 hrs. after operation.
86	175	104	Very high irregular pulse, marked tremors.
87	161	78	High pulse condition excellent, walked up three stairs 12 hrs. before sudden death.
88		103	Marked tremors of whole body. Too vicious to take pulse.
89	194	54	Extremely high pulse but no rigidity or tremors.
90	194	30	Very high pulse but did not appear sick.
91	161	140	A young pup, very reslctant to toxemia.
92	179	165	Marked tremors but condition otherwise good.
93	152	78	Very powerful dog shows relation between vital and physical strength.

12 2038-15 1 311
170 Av. P 87 Hrs. Av. length-of-life.

* The largest, strongest dogs were often the first to die. Physical strength no safeguard against obstructive autotoxemia.

In this connection the brilliant work of Moraschi, Ruiz and Natale[16] of Buenos Ayres should not be forgotten. They have shown conclusively, by injection into rabbits, that the intestinal contents from the obstructed segment became less toxic directly as the obstruction neared the rectum. While the obstructed duodenal contents were the most toxic, the feces of the sigmoid were definitely the least toxic of all. This intoxication these authors would attribute to a symbiotic action of the bacteria.

This is a totally new conception, for prevailing opinion until recently has been that these bacteria themselves were the source of the fatal toxemia. The impression that we have gained, however, is that the bacteria were facultative parasites and that at least the major part of detoxication was accomplished by the epithelial cells themselves. Orojejunal regions which bacterially are almost sterile have well defined power to limit the toxemia of obstruction.[17] It is not easy to see why this primitive autogenous function, on the existence of which the interpretation of our provisional results is based, should have been relinquished by the cells most directly concerned, to be turned over to parasitic cells of alien species. It presupposes a true obligate symbiosis which is confessedly rare in nature.

There is another point; if these bacteria played so very important a part in intestinal metabolism, the

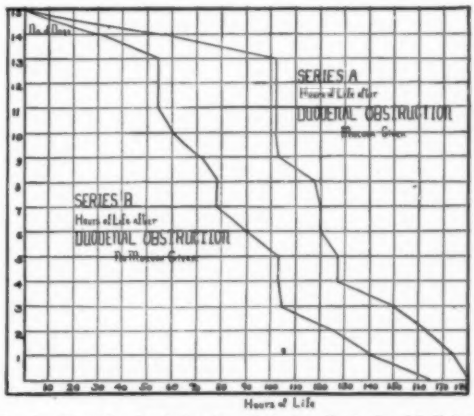

Fig. 4.—Graphic chart showing that the effect of epithelial medication is noticeable during the first 100 hours only of obstruction. This fact and the parallelism of the subsequent charts strongly suggest a biologic reaction. Average difference in length of life between treated and untreated animals was thirty-six hours.

Fig. 5.—Graphic chart showing average pulse-rates in treated and untreated animals from operation until death. Note parallelism after initial separation of charts. Average lowering in pulse, 33 beats. Onset of high pulse usually within eighteen hours of operation. Too early for bacterial toxemia.

giving of large doses of calomel, which Baumann[18] proved to have the power of suspending bacterial action, should be followed by quite remarkable changes in the host. Ought not the healthy to fall sick and the obstructed to recover promptly? Still another point tending to refute the bacterial origin of the toxemia has

16. Moraschi, Ruiz, Natale: El proceso de la digestion y la toxicidad del contenido intestinal (Oclusiones experimentales hipotoxia fecal relativa), Sem. méd., Buenos Ayres, 1909, p. 1603.

17. Draper, Maury: Intestinal Obstruction. An Outline for Treatment Based on Cause of Death. Am. Jour. Med. Sc., May, 1909, cxxxvii, 725.

18. Baumann: Ztschr. f. physiol. Chemie, 1886, x, 123.

been made by Frank Wood, who says (personal communication): "We not infrequently see cases of fecal vomiting, in which, as soon as the obstruction is relieved, the patients recover promptly."

However this may be, those interested in the subject certainly owe a debt of gratitude to Roger and his pupils, who were the first to call our attention to the autogenous origin of obstructive toxemia. Whatever helpful parts the bacteria may or may not play, it is a healthful sign of progress that they have been relegated to minor positions in the consideration of death in duodenal obstruction. Emancipation is welcome from the hereditary text-book dogmas of "nervous influences," "shock," "stagnation of contents" and "passage of bacteria and tainty, that duodenal obstruction caused any visible changes in the liver-cells. E. T. Bell[19] of the University of Minnesota has shown that the amount of fat present in a liver varied widely with the amount and quality of feeding.

How reliable an index of function, therefore, the presence or absence of morphologic changes in an organ might be after duodenal obstruction remains to be seen. Schlutz[20] has recently worked on a newly devised chemical method which Tollens[21] hopes may ultimately add to our knowledge of liver function. Dr. Schlutz suggested its possible usefulness in these studies, and I have the privilege of reporting his provisional findings.† The method deals with the quantitative determination of gly-

TABLE 3.—EXPERIMENT 1. DOG 30. EXCRETION OF NITROGEN *

Date of Exp.	Length, Hours	Vol. of Urine c.c.	Total N gm.	Urea N gm.	Ammonia N gm.	Urea and NH_3 N gm.	Creatinin N gm.	Creatin N gm.	Creatinin and Creatin N gm.	Undeter. N gm.	Per Cent. of Total Nitrogen: Urea	Ammonia	Urea and NH_3	Creatinin	Creatin	Creatinin and Creatin	Undeter. N
5/5–6	23	520	13.60	10.4160	0.3998	10.8158	0.1830	0.2270	0.410	2.3472	76.58	2.20	78.78	1.346	1.670	3.014	18.205
5/6–7 †	25	460	15.40	11.060	0.580	11.640	0.210	0.280	0.490	3.270	71.81	3.76	75.57	1.364	1.819	3.182	21.248
5/7–8	25	350	14.0	12.46	0.414	12.874	0.210	0.288	0.498	0.628	88.99	2.95	91.94	1.50	2.057	3.557	4.503
5/8–9	18	282	12.40	11.08	0.340	11.420	0.137	0.333	0.470	0.5098	89.35	2.74	92.09	1.103	2.685	3.789	4.1214
5/9–10‡	25	246	9.30	7.21	0.168	7.3780	0.1954	0.1298	0.3252	1.5968	77.52	1.8064	79.33	2.101	1.395	3.447	17.177
5/10–12§	47	325	12.20	9.10	0.680	9.780	0.2867	0.3318	0.6185	1.8015	74.59	5.5137	80.16	2.35	2.72	5.07	14.76

* Weight of this dog at beginning, 17 kg.; at end, ? † Five gm. camphor subcutaneously. ‡ Obstruction. § Cage—contaminated specimen. Vomitus mixed with blood and possibly urine or fecal matter. Total quantity, inc. wash water, 885 c.c.; total N, 6.797 gm.

TABLE 4.—GLYCURONIC ACID AND CAMPHOR-GLYCURONIC EXCRETION

Normal period = 1 c.c. of urine = 0.00081 gm. glycuronic acid.

Date of Exper.	Length of Period, Hours	Volume of Urine c.c.	Nor. Amount of Glyc. Acid gm.	Amount Act. Passed as Comb. Camph. Glyc. Acid gm.	Increase Over Nor. gm.	Per Cent. of Theoretical Total Excreted in 48-Hour Period
5/5–6	23	520	0.4222	.....	.....	5 gm. camphor = 11.20 gm. combined camphor-glycuronic acid.
5/6–7 *	25	460	0.3726	3.2195	2.8469	
5/7–8	25	350	0.2835	2.1144	1.8309	Preceding obstruction: Total excretion for a period of 48 hours after giving camphor = 4.6778 gm. or 41.76 per cent. of a theoretical total of 11.20 gm. camph. glycuronic acid.
5/8–9	18	282	0.2284	0.6144	0.3860	
Operation	..	...	0.8845	5.9483	5.0638	
5/9–10	25	246	0.1992	0.5904	0.3912	Following obstruction: Total excretion for a period of 47 hours after giving 5½ gm. camphor =3.2498 or 27.19 per cent. of a theoretical total of 11.95 gm. camph. glyc. acid.
5/10–12†	47	325	0.2362	3.4860	3.2498	
.....	..	...	0.4354	4.0764	3.6410	

* 5 gm. camphor subcutaneously. † 5½ gm. camphor at beginning of period.

bacterial products through the stretched intestine." These interesting symptoms should be set aside in favor of the underlying modern conception of glandular interaction, interference with which is probably the fundamental cause of obstructive death.

Jejunal and ileac mucosa, if capable of prolonging life and lowering the heart-beat in duodenally obstructed dogs, might reasonably be expected to modify any cellular tissue changes produced by the toxemia. One might expect such changes to be seen in the liver. So widely differing, however, is the morphology of the liver-cell under what appear to be normal conditions that we have as yet been unable to determine, with any degree of certainty, that duodenal obstruction caused any visible changes in the liver-cells. E. T. Bell[19] of the University of Minnesota has shown that the amount of fat present in a liver varied widely with the amount and quality of feeding.

How reliable an index of function, therefore, the presence or absence of morphologic changes in an organ might be after duodenal obstruction remains to be seen. Schlutz[20] has recently worked on a newly devised chemical method which Tollens[21] hopes may ultimately add to our knowledge of liver function. Dr. Schlutz suggested its possible usefulness in these studies, and I have the privilege of reporting his provisional findings.† The method deals with the quantitative determination of glycuronic acid. This substance combines with certain poisons, notably camphor, and this pairing or detoxicating is thought to take place entirely in the liver. By giving camphor hypodermatically, therefore, it seemed possible to find some true index of the functional condition of the liver before and after duodenal obstruction.

19. Bell, E. T.: Anat. Rec., May, 1910, iv. Also article soon to be published in Internat. Monatschr.

20. Schlutz, F. W.: Die Fraction der Aminosauren im Säuglingsharn, Jahrb. f. Kinderh., lxxii, 97, 1910; Das Verhalten des Kamphers im Organismus des Säuglings, Ztschr. f. Kinderh., I, No. 2, p. 197.

21. Tollens: Ueber Glucoronsaure u. Aetherschwefelsauren im Menschlichen Harn., Ztschr. f. physiol. Chemie, 1910, lxvii.

† From the Laboratory of Physiology, University of Minnesota.

In the single study of Schlutz completed to date the tables showed, first, that the nitrogen metabolism during camphor administration was well within the normal, both before and after duodenal obstruction; second, that the glycuronic camphor pairing decreased from 41 to 27 before and after obstruction. This may indicate that the liver function had been impaired.

SUMMARY OF RESULTS

1. Epithelial cells of jejunum and ileum given by mouth to duodenally obstructed dogs prolonged life in a series of fifteen animals by about thirty-six hours over a similar series to which they were not given.
2. The average pulse-rate of the treated dogs was thirty-three beats lower than that of the untreated.
3. The belief that we were dealing with a cytologic product was strengthened by the trend of the charts. These showed that beneficial action occurred early, just as in the case of any successful treatment by antibodies.
4. The chemical determinations in one animal showed a normal nitrogen metabolism after duodenal obstruction and suggested a decreased functional power of the liver in terms of glycuronic camphor.
5. This series is far too small to justify any positive conclusions. Its value is simply that of a suggestive working basis.

THE USE OF CALCIUM CARBONATE IN SOLID MEDIA FOR THE DIFFERENTIATION OF SUGAR-FERMENTING BACTERIA

ESPECIALLY OF THE COLON-TYPHOID GROUP *

ARTHUR J. BENDICK, M.D.
NEW YORK

Media containing lactose with litmus as an indicator for acidity have been extensively used for growing the

Fig. 1.—Culture of the colon bacillus, showing the clear area about each colony, where the chalk has been dissolved by the acid.

colon bacillus and differentiating it from closely allied organisms. This type of medium is well exemplified in Wurtz's lactose litmus-agar which consists of a 1 per cent. lactose-agar colored with litmus. These media have several defects, chiefly due to the rapid diffusion of the acid, causing a general reddening of the adjacent medium. This necessitates having plates with few colonies and examining and counting while the colonies are still small. Also gas formation often occurs, ruining the plate.

To overcome these disadvantages, media consisting of stiffer agar have been devised, on which surface smears are made. This is the type of the Conradi-

Fig. 2.—Mixed culture of the colon and typhoid bacilli. About each colon colony there is a clear, translucent zone, appearing as a black zone in photograph on account of plate being placed against a black background. This transparent zone is absent about the typhoid colonies.

Drigalski medium, which consists of a special nutrient 3 per cent. agar, to which crystal violet is added as an inhibitor for less resistant organisms than the typhoid bacillus.

With the intention of limiting the diffusion of the acid formed by the splitting of the lactose, I began to experiment by adding various alkalies to the medium. But such alkalies as NaOH and $NaCO_3$ when added in sufficient quantities had a deleterious effect on many of the organisms, and besides colored the medium an intense blue, which completely masked the production of alkalies, which production is of value in identifying typhoid colonies and those of the organisms of putrefaction.

A neutral agar was desired in which the acid produced by the fermentation of the sugar would be neutralized in order to prevent its diffusion. This result can best be obtained by using an insoluble alkali or alkaline salt.

The simplest and most efficient of the insoluble alkalies seems to be calcium carbonate — precipitated chalk. Being an impalpable powder, it is readily distributed throughout the medium, it exerts no inhibition on the organisms, is readily obtainable everywhere, and is inexpensive. Furthermore, the chalk in combining with the acid is dissolved; hence acid-forming colonies are surrounded by a clear zone. This clearing of the medium is a valuable aid in recognizing acid-forming colonies.

* From the Department of Bacteriology, College of Physicians and Surgeons, Columbia University.

The medium consists of:

	Gm. or c.c.
Agar	15
Liebig's extract	5
Salt	5
Peptone	10
Lactose	20
Calcium carbonate	4
Litmus solution	100
Water	1,000

The agar, Liebig's extract, salt, and peptone are dissolved in one liter of water either in the autoclave or over the free flame. This is then cleared with the whites of two eggs and filtered through cotton. No titration or adjustment of reaction is necessary. The medium should then be flasked, 250 c.c. to a flask preferably of 500 c.c. size. One gm. of powdered calcium carbonate is then added to each flask, and the whole sterilized in the autoclave. Finally to each flask is added 25 c.c. of Kahlbaum's aqueous litmus—according to Kubel and Thieman—(or an equal quantity of a solution of azolithmine); and 5 gm. of chemically pure lactose. Tube by pouring direct from flasks to tubes, keeping contents well mixed. Sterilize in an Arnold sterilizer for fifteen minutes on three consecutive days.

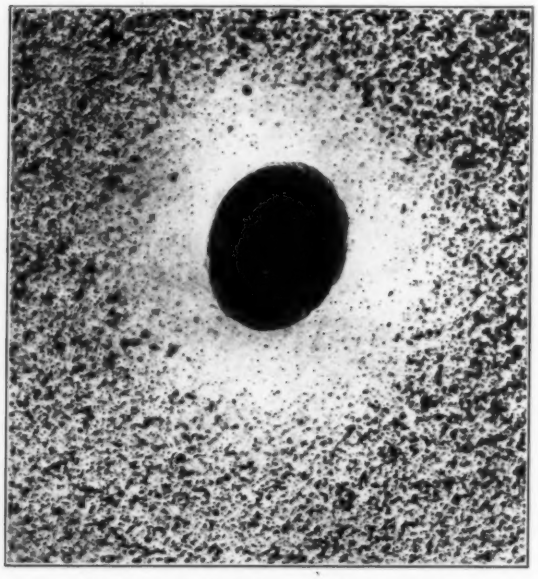

Fig. 3.—Deep colon colony, showing clear area.

In using this medium either surface smears may be made on plates or the tubes inoculated and poured. For most uses the poured plates give best results. To obtain a uniform distribution of the chalk throughout the medium, the tubes should be rolled rapidly to and fro between the palms of one's hands, and then by alternately depressing and raising the plugged end of the tube combining this with a rotary motion. This mixing should be done as soon as tubes are melted and while still hot. They are then cooled to 42 C. They may then be inoculated and poured.

Inoculated plates may be incubated fourteen to forty-eight hours at 37 C., or from two to five days at room temperature. Usually eighteen to twenty-four hours at 37 C. gives best results.

Acid production in this medium is shown by:

1. Dissolving of the chalk about the colony due to its combination with the organic acids.

2. Reddening of the colony due to the litmus.

3. Microscopically by the deposition of crystals of the calcium salts of the organic acids.

Differentiation between colon and typhoid colonies on this medium is readily made.

COLON COLONIES

1. *Surface.*—These are large disk-shaped colonies, slightly depressed in the media. There is a variable amount of clearing about them due to the solution of the chalk. The extent of clearing depends on the length of time the plates are incubated. Microscopically on focusing up and down, the chalk is seen to be dissolved just below the colony and about its periphery. Crystals of the calcium organic acid salts are usually seen.

2. *Deep.*—These are rounded or spindle-shaped, showing a very distinct clearing of the chalk for a considerable area about the colony.

TYPHOID COLONIES

1. *Surface.*—These are large white or bluish-tinged colonies showing no clearing of the chalk. Microscopically the amorphous granules of the chalk are seen to be both within and about the colony. No crystals of the organic salts are present.

2. *Deep.*—These are distinct colonies lying embedded in the chalk without solution of the chalk occurring.

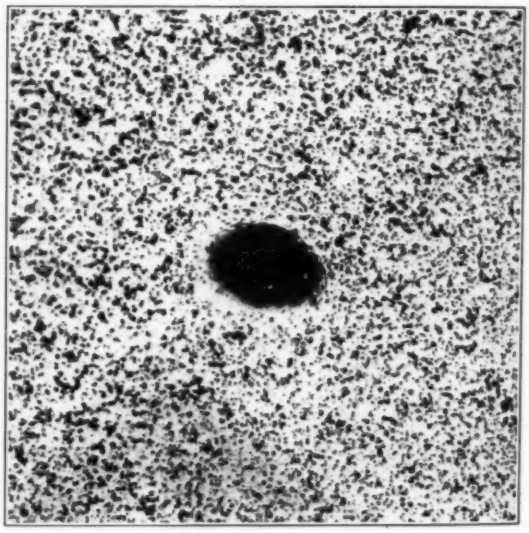

Fig. 4.—Deep typhoid colony.

For isolating the typhoid bacillus from feces, sewage, or contaminated water, 1 per cent. lactose and 1 per cent. saccharose may with advantage be substituted for the 2 per cent. lactose. Plates should be incubated fourteen to twenty hours at 37 C. Suspected typhoid colonies should be fished and inoculated into Hiss tube media or other suitable media for identification. I have on several tests isolated typhoid bacilli direct from the feces without enrichment.

The advantages of this medium are:

1. Neutralization of the acid as it is produced.

A. Crowded or well-diluted plates may be used with equal advantage.

B. The period of incubation is not limited.

C. Gas formation is greatly lessened, probably owing to the neutralization of the acid as soon as it is produced, thereby preventing it from being further broken down.

D. Acid formation is more clearly shown and its extent may be gauged.

2. Simplicity of the medium:

A. Stock meat extract agar may be used by simply adding chalk, lactose, and litmus.

B. The medium is neutral in reaction without titration or adjustment. The acidity of the meat extract is neutralized by the chalk, giving a neutral agar on which slight alkalinity or acidity is readily shown.

This type of medium may be used in growing and identifying any organism in which the fermentation of any sugar is the basis of its differentiation. For some organisms such as the pneumococcus and streptococcus, meat infusion agar may be substituted for the meat extract agar. Any of the sugars may be used instead of the lactose. The percentage of sugar may be varied from 1 to 5 per cent.

In conclusion I desire to acknowledge my indebtedness to Prof. P. H. Hiss for many valuable suggestions, and to Mr. Bosse for the accompanying photographs.

409 Broadway.

PINNING FRACTURES THROUGH A CANNULA WITH THE AID OF THE FLUOROSCOPIC SCREEN *

ROBERT T. MORRIS, M.D.
Professor of Surgery, New York Post-Graduate Medical School
NEW YORK

Last year I had occasion to remove a pin from a bronchus with a pair of alligator forceps inserted through the trachea. The fluoroscopic screen was employed for watching the movement of the forceps within the chest cavity. An account of this procedure was published in *Surgery, Gynecology and Obstetrics*, May, 1910.

It occurred to me at the time that if pins could be removed so easily with the aid of the fluoroscopic screen a reversal of the process might allow pins to be put in with facility in certain fractured bones which are not readily kept in place with splints.

At the present time I am engaged in experimental work along this line of observation, and publish a preliminary note on the subject quite as much for the purpose of pointing out difficulties in some cases, as in showing how this resource facilitates our work in other cases. We are now enabled to avoid open operation in certain cases in which open operation is otherwise indicated, and we can hold the ends of fractured bones in position in some annoying cases in which open operation would not be quite justifiable.

The work can be done in large part with such instruments as most surgeons have at hand, but it has seemed best to make up a case of instruments particularly adapted for the new work. A special table also was constructed with various slides, so that any part of the anesthetized patient could be conveniently exposed to the *x*-ray in front of the fluoroscopic screen. Dr. L. Kast made the first helpful suggestions in ways for using the fluoroscope for this work, and Dr. Howard T. Lewis, under the direction of Dr. F. H. Albee, has assisted in much of my work and in planning conveniences.

In fractures of the smaller bones the fluoroscopic part of an ordinary fluoroscope can be detached and used to better advantage than the large screen.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

The instruments consist of trocars and cannulas, which are inserted obliquely to points of fractures; bone-drills for cutting channels for dowel-pins; tampers for pressing dowel-pins into place; an alligator forceps for removing badly placed dowel-pins; and segments of silver or German-silver wire of different diameters, to be cut up into requisite lengths with the file for dowel-pins.

When a dowel-pin is to be inserted the patient is anesthetized. Up to the present time I have depended on general anesthesia, but shall use local anesthesia in selected cases after a little more experience.

The steps in order are as follows:

1. A proper area of skin is sterilized.

2. The fluoroscopic screen is held in a convenient position for observing the site of fracture.

3. One or more assistants make traction and manipulate fragments until they are seen to be in position.

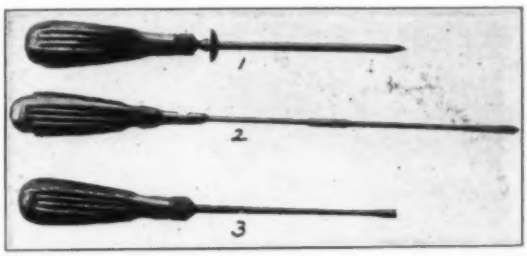

Fig. 1.—Three instruments of the special set (Kny-Scheerer Company, New York): (1) cannula and trocar with short point; (2) drill to fit snugly into the cannula and to project beyond its lumen; (3) tamper for pressing dowel-pins into place.

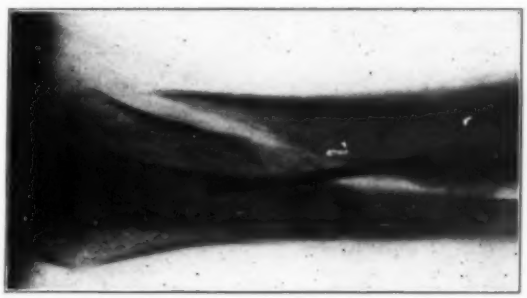

Fig. 2.—An accident to be avoided. Fragments were held accurately in position and pin appeared to be entered properly. This radiograph, taken next day, showed fragments out of position.

4. A trocar and cannula are inserted through the skin, and carried obliquely to a chosen point near the site of fracture.

5. The trocar is removed, leaving the cannula in position.

6. A drill is passed through the cannula, and transfixes both fragments which are to be pinned.

7. The drill is removed, and a dowel-pin of suitable length dropped into the cannula.

8. The pin is pressed into place in the drill holes with the aid of a tamper.

9. The cannula is removed, and a trifling dressing applied over the skin puncture.

10. Customary splints are applied to relieve stress on the dowel-pin.

Now that surgery is leaving the interior organs and getting back to bones again, this simplification of method for fastening fragments together promises to become a resource of considerable value, in well-selected cases. The entire procedure of introducing the trocar and the cannula, drilling fragments, and putting in the pin, is observed through the fluoroscopic screen as though one were watching his work through a window.

Dowel-pins are supposed to be left permanently in place, and I have so far had to remove only one which worked out of a fracture of the neck of the femur after union had been obtained. The number of pins to be used in any given case and the length of pins will depend entirely on the judgment of the operator. For

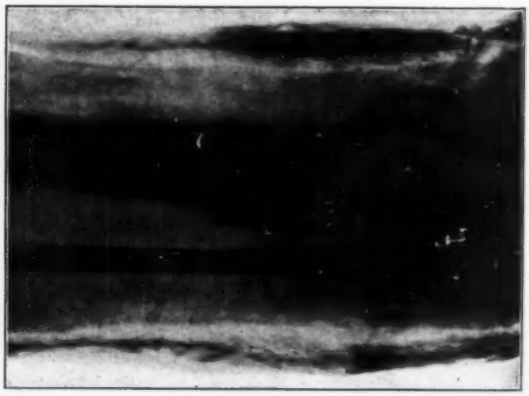

Fig. 3.—Same case as Figure 2; observation from another point of view showed pin not traversing fragments at all, but pushed alongside of tibia instead.

Fig. 4.—Pin appears to traverse both fragments of radius properly.

a fractured rib or clavicle a single pin less than an inch in length should commonly suffice. In fractures of larger bones I have used pins two or three inches in length. When we are dealing with a short fragment, easily rotated, as in fracture of the inner condyle of the humerus, two pins are likely to be required for accuracy of adjustment.

In cases in which fragments of smaller bones are not readily brought into position by assistants, an incision sufficient to allow the entering of a tenaculum or bullet forceps may be made (a refractory fragment is thus held in place), and the procedure is then completed with the aid of the fluoroscopic screen. This avoids the necessity for long incisions required for the introduction of Lane plates, and avoids extensive injury to soft tissues such as occurs in common methods of wiring fractured bones.

In one case of separation of the distal epiphysis of the humerus, and in another case of fracture of the radius with interposed tissue, it was necessary to abandon the work with the fluoroscopic screen and to make long open incisions, because neither traction nor manipulation, nor yet the use of fracture forceps, allowed the fragments to be brought into good position. I mention this point to show one of the limitations of the new method.

In a number of cases examined with reference to the idea of introducing dowel-pins, it was observed that ordinary splints sufficed to hold fragments in good position, and nothing further was attempted. It would have been meddlesome.

The chief accident likely to occur in the introduction of a dowel-pin is sliding the pin alongside of a bone instead of through the drill openings. This I have done twice, once in a spiroid fracture of the tibia (Figs. 2 and 3) and once in a fracture of the humerus. If one watches the fluoroscopic screen closely and has a clear picture, with the screen moved to two or three points of

Fig. 5.—Same case as Figure 4; from another point of view. Pin traversing upper fragment of radius but missing lower fragment.

observation while he is at work, the accident is not likely to occur. It is best avoided by pressing the cannula against the bone with considerable force, and keeping it snugly in place between the moments of removing the drill, and of entering the pin.

In Figures 4 and 5 the pin traversed the drill opening in one fragment properly, but missed the opening in the other fragment, even though I took away the screen, made a small incision, and then held the lower fragment in what appeared to be good position with a pair of bullet forceps.

One of these failures, illustrated in Figures 2 and 3, was due to observing the site of fracture from one point of observation only. In the other case (Figs. 4 and 5), with a small open incision, failure was due to my allowing the lower fragment to slip out of place at the moment when the pin was introduced, not using the screen for that point of procedure. No matter how well fragments seem to be kept in position with dowel-pins we must use the customary splints in addition, because during the period of osteoporosis pins might loosen under stress.

In old un-united fractures I have preferred up to the present time the long open incision and the use of Lane plates or wiring, for the reason that the ends of bones in such fractures usually need to be freshened. In selected cases of old un-united fractures I shall later experiment with dowel-pins, adding the resource of Bier (blood injection), but suitable cases for this experiment have not as yet been found in my clinic.

In cases in which we have interposed tissue, as for instance, in fractures of the patella, the dowel-pin will not be a proper resource, but it promises to have a field of usefulness in our every-day work.

The time for using the dowel-pin is ordinarily five or six days after the receipt of a fracture. At this time if we have used splints or extension apparatus, or both, exudates have undergone partial absorption, and the area is protected against infection by an established local hyperleukocytosis.

Just as this article is ready for the press, Dr. Kast suggests that accidents due to observing fracture sites from one point of view only, may be avoided by employing two *x*-ray tubes simultaneously, placing them at points which allow a view of fragments from two directions, without the necessity for changing the position of a fractured limb.

616 Madison Avenue.

EXPERIMENTAL AND CLINICAL WORK TO DETERMINE THE VALUE OF LANE'S BONE PLATING *

WILLARD BARTLETT, M.D., AND W. R. HEWITT, M.D.
ST. LOUIS

A visit to Mr. Lane's clinic at Guy's Hospital inspired an inquiry into the practical utility of the traction appliance, one of the most ingenious mechanical procedures which has ever been adapted to surgical therapeutics. In pursuit thereof, thirty-four screws, about half of them infected, were driven into the long pipe bones of dogs, and withdrawn at intervals, varying from one hour to seventy-one days, to determine the force needed to dislodge them, it being presumed that our surgical interest in most fractures does or should cease in ten weeks if all goes well.

In addition fifty-two patients were operated on, at periods ranging from a few hours to eight months after the injury. A critical study of the results is undertaken after a lapse of from five weeks to one year, respectively.

REPORT OF EXPERIMENTS

EXPERIMENT 1.—Immediate withdrawal, small dog, March 18, 1911. No. 3 ⅜-inch screws.

	Pounds
Left femur	75
Right femur	74
Right humerus	78
Left humerus	90
Average	79¼

This animal died under the anesthetic, hence simply a preliminary test of resistance to withdrawal was made. The bones averaged about 1 cm. in diameter and the cortex about 2 mm. in thickness. I am indebted to Dr. Erlanger for suggesting a self-registering spring-balance which was used in this and all succeeding experiments.

EXPERIMENT 2.—Two days. Infected April 29, 1911. One No. 3, ⅜-inch screw in each femur and humerus. Medium-sized yellow dog. Tumor on lower jaw. No attention paid to asepsis; wounds not sewed up. Died May 1.

Dr. Garrey helped withdraw the screws with direct forceps, etc. Stinking yellow pus in each wound; peritoneum dissected by it extensively.

	Pounds
Left humerus	44
Right humerus	10
Left femur	40
Right femur	42
Average	34

Pulled with double wedge forceps may make result too low and not wholly the consequence of infection. It would seem early for screws to loosen.

EXPERIMENT 3.—Ten days. March 18, 1911. Small, white mottled bitch. One, ⅜-inch, No. 3 screw in each femur and humerus. All wounds aseptic and sutured. Brand No. "1." Right ham.

March 31, 1911: Withdrawn after death, three days ago.

	Pounds
Right femur	42
Left femur	80
Right humerus	75
Left humerus	100*
Average	74¼

* Wire broke.

All wounds aseptic, healed.

EXPERIMENT 4.—Twenty-seven days. April 22, 1911. Small, 4-pound grey bitch. One slit in each ear; without any asepsis; wounds left open. Six No. 3 screws, ⅜-inch long were driven in both humeri and femurs; one right radius, also one left tibia. May 19, killed by chloroform.

Original	Control
42 right humerus	44 (infected)
6 left humerus	66 (infected)
42 right femur	66 (clean)
58 left femur	76 (clean)
37 average	63 average

Radius and tibia not drawn.

Right humerus, skin healed. Granulation tissue around screw-head. Cortex absorbed (in bottle).

Left radius, open granulating wound, cortex absorbed on near side. Screw perforated bone through cortex of opposite side. No lesion on far side (bottle).

Right radius, skin healed, pus and granulation tissue around screw-head. Some absorption of cortex (bottle).

All bones on front leg showed great thickening of bone about absorption locus.

Right femur, healed, normal appearance.

Left femur, bone appearance normal.

Left humerus, granulating wound open; cortex absorbed. Screw pulled at 6 pounds, caught in cortex of one side only. Control-bone broke at lesion without pulling screw, 66 pounds.

Thickness of cortex, 1.5 mm.

Average diameter of bones, 7 mm.

EXPERIMENT 5.—Forty-two days. April 11, 1911. Largest black dog, weight 66 pounds. No. 3 screws, ⅜-inch in each femur, humerus, ulna and tibia, 8 screws in all. Killed May 23, 1911.

Original	Control
75 R. humerus	90
120 L. humerus	180 (fail)
166 R. femur	
136 L. femur	Thickening to level of head
160 R. radius	115 granulations
82 L. radius	142
150 R. tibia	
L. tibia	
127 average	131¼ average

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* Because of the space that would be required, the case reports are here omitted, but the complete article appears in the Transactions of the Section, and also in the authors' reprints, a copy of which will be sent by the authors or by THE JOURNAL on receipt of a stamped and addressed envelope.

* Experimental part from Surgical Department of Washington University. Clinical part from St. Louis City Hospital.

All wounds healed by first intention. Left tibia preserved to show screw-head embedded under tendon in fibroma, size of small marble. Around screw in left femur thickening to level of head. In left radius, evidently an infection. Granulations, absorption of cortex around screw and thickening of adjacent bone.

EXPERIMENT 6.—Sixty days. March 25, 1911. Brand III. Yellow bitch, weight 15 pounds. A screw in each femur and humerus, No. 3, ⅜-inch. Killed May 24, 1911.

Original	Control
57 R. femur	68 bone broken at normal hole
60 L. femur	69
96 R. humerus	63
110 L. humerus	48 granulations (Path)
80¾ average	62 average

All wounds healed clean, screws bright. Bones (three) look as if screws had just been inserted (except left humerus). In left humerus slight osteoporosis around screw, and cortex elevated in ring surrounding it (slight). Left humerus to pathologist.

Original at sixty days pulled higher than controls.

EXPERIMENT 7.—Seventy-one days. March 21, 1911. In each femur and humerus one screw, size No. 3, ⅜-inch. Smallest Lane drill. Brand "11," right ham. Killed May 31, 1911.

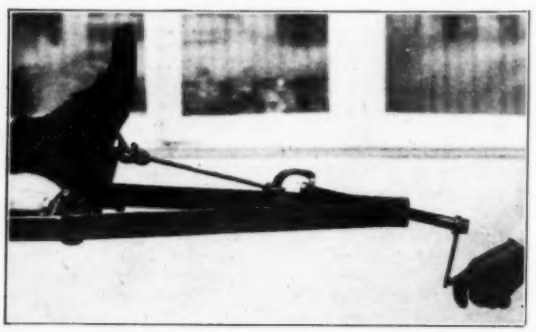

Fig. 1.—Traction appliance attached to table and in use.

Original	Control	Diameter mm.
100 R. femur	88	9
0 L. femur	112	11
130 R. humerus	128	9
125 L. humerus	110	
118 1/3 average	109½ average	

All skin wounds healed.

All except left femur looked as if screws had been freshly driven. Screws bright; contour of bone unaltered. Left femur infected, granulations, osteoporosis, thickening. Average thickness of cortex, 2 mm. Average diameter of bone, 10 mm.—1 cm. Screws are 1 cm. long. Dog smaller than average used.

An average pull of 95 4/5 pounds is required to dislodge clean No. 3, ⅜-inch screws, from dog bones with average cortex of 2 mm. after they have been in place from one day to seventy-one days. On the other hand 41 7/9 pounds will accomplish the same thing with infected screws. There was but one exception to this rule; here it required 110 pounds at sixty days to withdraw an infected screw, when the average of controls on this dog was but 62 pounds. In the dog the skin heals in a few weeks over the infected screw, but this has little effect in the tractive force required to dislodge it. An interesting phenomenon is the constant absorption of bone cortex around infected screws and a thickening around this area. Often the screw-head was almost hidden completely, so in one instance, apparently, Nature takes good care of an infected foreign body in dogs.

We are indebted to Drs. Opie and Smith for microscopic study of several bones in which screws had been driven and extracted. In Experiment 4, the left humerus presented an absorption locus around the screw and surrounding this crater there was an elevated ring. This latter proved to be young bone with osteoblasts to be seen in many fields. Osteoblasts were determined in the area where absorption was taking place and a diffuse infiltration of lymphocytes marked the tissue surrounding which was apparently the defect made by the screw.

The left humerus in Experiment 6 presented practically the same microscopic picture in every particular.

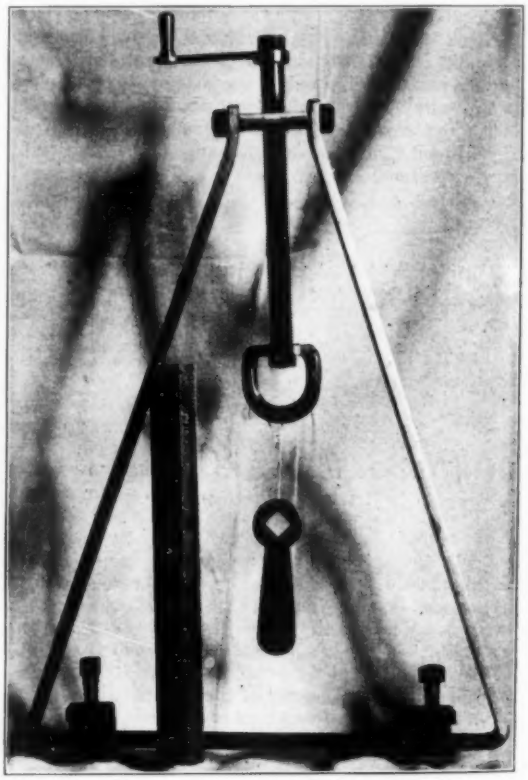

Fig. 2.—Traction appliance in detail.

A clean screw and the bone in which it is imbedded look just the same whether viewed when inserted or seventy-one days later. In other words, no macroscopic reaction occurs unless infection takes place.

It is of more than passing interest to note that clean screws, which have lain in bone for more than sixty days, required, in these experiments at least, more traction for their dislodgement than did their controls. If the same experience is had with the human subject, it is not devoid of interest so far as fractures are concerned in which union is delayed beyond the usual period.

As stated above, a pull of more than ninety-five pounds was required to withdraw the average clean screw of No. 3 gauge, from bones of about 2 mm. cortex. Now, the corresponding human bones have a much

thicker cortex; moreover, we use No. 5 and No. 7 screws which are much larger in every dimension, to say nothing of the fact that as many as ten of them are imbedded at one time. It does not require much mental effort to picture the great amount of force needed to tear such a plate out of an aseptic wound at any time in its history, provided only it has been correctly applied; viz., by means of a drill the size of the screw barrel with the screw threaded to its head.

Of course, we take into consideration only a direct pull on the screws. As to leverage sufficient to break a plate or tear out a screw, that is quite another matter; it is for this that splints are used. Since not an infected screw dropped out in all my experimental work, it stands to reason that it is some external influence which

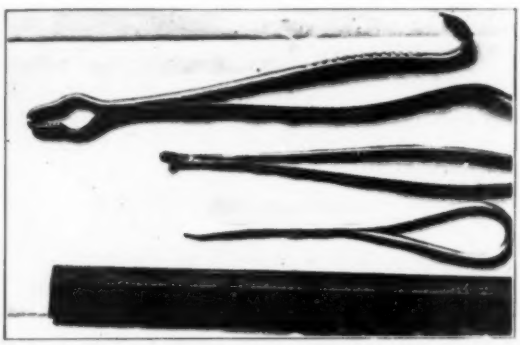

Fig. 3.—Bone forceps (Lane's), screw-holder (Lane's) and screw-driver.

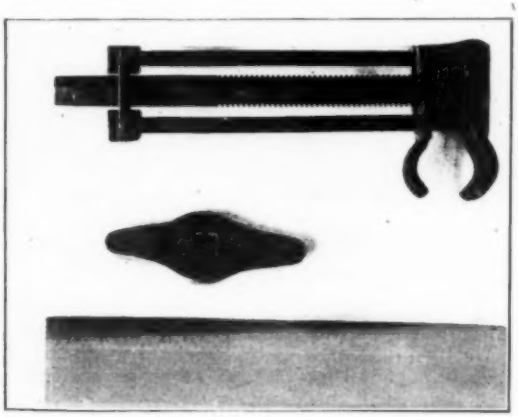

Fig. 4.—Embracing instrument.

loosens them in the human subject when infected. No doubt, this is the leverage exerted by the fragments which are not kept immobile long enough for healing to take place in the presence of a foreign body, as one experience with compound fractures has shown to be possible in certain instances.

CLINICAL DATA

At the end of this article* will be found the full histories of our fifty-two patients. We are unable to trace twenty-three from the time they left the hospital, and one is too recent to be of value; thus, we have for final study twenty-eight end-results.

* See footnote at beginning of the article.

Forty-three wounds healed by first intention, five were infected, one was left open to granulate, and in three instances, the history makes no mention of this feature. Only three of the above infections were in clean cases.

A solid union was obtained in twenty-five cases; non-union resulted once; two patients have died, and one operation was performed only five weeks ago.

Eight plates were removed; five of them being in simple fractures. One had compressed the musculo-spinal nerve; one occasioned a refracture (Case 11), one was infected at the time of operation, but as to indications for removal of the other two, we are not certain, since we did not take them out.

Five of these fractures were compound; two of them healed by first intention; two were infected; one granulated over the plate and went on to complete healing. Three of them got solid union, and in three the plate had to be removed.

There was a fatal result in two instances:

Patient 2, a chronic alcoholic, died of pneumonia, eight days after a fractured clavicle was plated. This case was badly chosen.

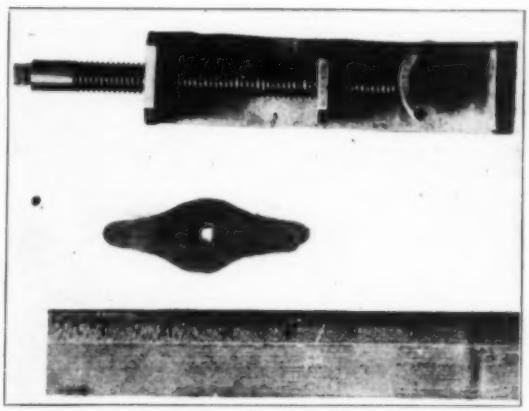

Fig. 5.—Embracing instrument.

Patient 5, another chronic alcoholic, managed to obtain whiskey from a friend a few days after the operation, became intoxicated, developed delirium tremens, saturated a thigh dressing with urine and feces, became infected and died on the fifteenth day.

This gives us a mortality of 3.84 per cent., which is not to be treated lightly where the operation is done for cosmetic or functional impairment alone.

We regret that we cannot give ultimate details in more cases. By letter, personal calls, etc., every effort to follow our patients was made, but many of them were "floaters," who had no permanent address.

If then, these statistics leave something to be desired, it must be remembered that most of these were cases picked as being too difficult for other forms of treatment, and that our city hospital patients are frequently poorly nourished and of the worst possible habits. In private practice one of us traced all his eight cases. Every patient got first intention, also solid bone union with perfect functional result. (W. B.)

Our city hospital is a training-school for doctors, hence the possibility of infection is greater. Doctors and nurses change, misunderstandings as to splints and

dressings occur and hence a method gets an unusually severe test, to say the least.

A refracture which occurred in Case 11, after plating, is of singular interest. Seventeen days after his humerus had been plated, this patient took off his dressing, swung his arm free, and something snapped. On a second operation, the three screws in the upper fragment were as they had been left, while the remaining three held firmly a triangular fragment of bone which they had torn out of the lower half of the shaft. No 11 is really not a plating case at all. We failed to make a plate hold here; the case is included merely for its allied interest.

Cases 13, 14 and 16 are interesting from the fact that all three illustrate successful surgical treatment of greatly impaired musculospiral nerves. Surely this is an argument in favor of the method at times.

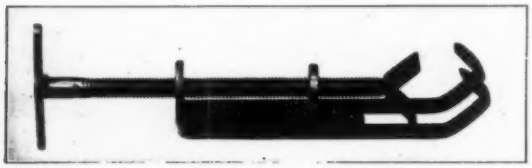

Fig. 6.—Embracing instrument.

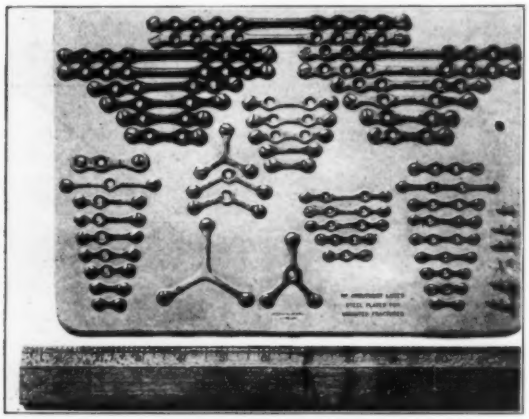

Fig. 7.—Lane's bone plates.

OPEN	GENERAL ANESTHESIA	CLOSED
Always used, fairly long.		Often used, short.
	INFECTION	
Can almost certainly be prevented in clean case by modern technic.		Not to be reckoned with.
	DISABILITY	
Much shortened, especially in lower extremity. Of great importance to wage-earners and the aged; more so in summer.		Much longer, especially if an oblique fracture and if extension is required.
	NON-UNION	
Preventable as far as interposition on tissues is concerned.		Interposition of soft tissues apparently a common cause.
	ANATOMIC	
Perfect if primary healing.		Rarely perfect, often deforming.
	FUNCTIONAL	
Perfect, provided primary healing is secured.		Often better than anatomic would lead one to expect.

If we heard Mr. Lane aright, he told us in London, last summer, that he plates every case. It is our opinion, however, that the surgical world will never be quite so radical.

Fig. 8.—Lane's screw.

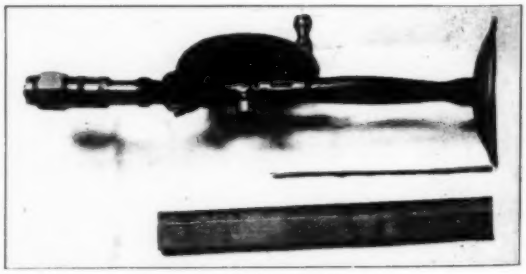

Fig. 9.—Drill-press and drill.

Case 24 will repay a perusal in its entirety. Here the ulnar nerve was sutured, the ulnar artery ligated, a number of tendons sutured, the ulna plated and other structures partially approximated in a compound injury; all these processes were accomplished with an ideal result.

A rather extensive operation was done on Patient 28. After plating an oblique fracture of the tibia, we did the same thing for a fibula which was broken in two places with a 2-inch fragment disposed at right angles to the axis. As a result, both wounds healed promptly and the man now does hard work on foot all day long.

Patient 36 was carrying trunks for a living—if his statement is to be believed—six weeks after we had plated a spiral fracture of the tibia, also a double one of the lower end of the fibula.

No amount of abstract reasoning can govern every case. Merely an effort is made here to show what our experience would indicate regarding a choice between forms of treatment.

We try to get a result by the closed method in any fracture of any bone that can be placed and held in accurate position as shown by *x*-rays. Lane's treatment is never applicable to one who is a bad operative risk. No consideration of function can offset a risk to life.

Lane's plating is the best form of treatment known to us, for non-union or mal-union, and is indicated in all fractures which cannot be readily kept in place. It cannot, however, be recommended as a harmless procedure in the hands of surgeons generally. It is something of a specialty and requires its own extensive armamentarium; at the same time it will tax the mechanical resourcefulness of the best operator.

We advise waiting a few days before operating, or until the initial shock is past, bleeding has ceased, and a wall of granulation tissue partially protects from infection.

For a leg fracture not too near the ankle, traction to any degree required can be obtained and the force rather evenly distributed by applying it at the heel of the

patient's shoe. A lace-shoe large enough to permit of free dorsal padding is used after a "screw-eye" has been driven through the mid-line just in front of the heel and anchored in a thin steel plate similar to an insole (Fig. 1). Our traction appliance is shown in Figure 2.

Make an incision that reaches the bone by the most direct route, which permits important vessels and nerves to be avoided. Where there is over-riding, the incision does not have to be as long as one would suppose, since traction lengthens it markedly. None but the most rigid asepsis can avail here. The skin is covered with towels, clamped to its cut edge. No fingers go into wounds and no instruments that have been touched are allowed to come in contact with exposed tissues. All needles and threads are handled with forceps, threads being mildly antiseptic.

Long-handled instruments permit of great leverage; they also enable an operator to work without danger of a hand getting into the wound. Figure 3 depicts Lane's bone forceps and screw holder, together with our own simple screw driver which any mechanic can make.

One need not concern oneself about periosteum; in fresh cases the work will be done within this envelope, but where the operation is undertaken for deformity or non-union at remote date, the periosteum is not likely to be opened. In any event, one should hug the bone and handle the soft parts as gently as possible.

It will often be found when the fragments are exposed that the *x*-ray is not an infallible guide. We occasionally met with a double fracture when the *x*-ray showed but one, and were frequently surprised in other ways.

In a recent fracture, over-traction is exerted until the ends of the fragments are separated by ¼ to ½ inch, after which one of the embracing instruments shown in Figures 4, 5 and 6, is applied. This lines up and guides them as the tension is relieved, with the effect that all spiculæ are forced to dovetail by muscular traction so perfectly that the break can hardly be seen. The "embracer" holds a Lane plate of the desired size which can now be screwed in at leisure.

This technic reduces the difficulties of the procedure to a degree which can be greatly appreciated by the operator, who has done this work with merely the armamentarium advertized as Lane's outfit, and especially appreciated by one who has attempted it with the instruments used in general bone work.

Another value of an embracing instrument is strikingly shown in two cases in which Dr. Carson, head of the department of surgery, recently operated. After applying the Martin instrument, he simply packed the wounds and allowed them to granulate. They healed within the usual time and both patients were discharged from the hospital with solid bony union. In a personal communication, Dr. Carson assures us that no harm was done to the bone by the long-continued pressure of the metal clamp.

We use Jessup tool steel and have many plates made to fit a given injury, after the *x*-ray picture has been seen. Mr. Lane's own set of patterns is shown in Figure 7. Plates of Jessup English steel can be molded during the operation to a bony inequality by heating in the flame, bending as desired, and then cooled gradually by dipping end-wise into boiling water, after which they are ready for air or fluid of any temperature.

Mr. Lane long ago called attention to the importance of using screws threaded to the head, as in Figure 8, and drills of the same diameter as the stem of the screw, the flanges being made thus to cut their own way into the cortex. These rather obvious mechanical principles have not been universally followed, and the results of such a neglect can be imagined.

The long drills used by us and the simple but effective mechanic's "press" used to drive them are shown in Figure 9. A screw may turn in its socket when a dull drill burns the bone; we have wrapped wire or silkworm around bone and plate in a few such cases with satisfactory results.

Wounds must be entirely dry before they are closed; this makes the use of a drain superfluous in clean cases, if, indeed, its use be not a menace to primary healing. Every tissue plane must be accurately reunited by layer sutures until the surface is reached.

The ideal skin closure is made with subcuticular suture of catgut, after which no change of dressing is recommended until the patient is discharged at the end of several weeks. Immobilization is required for as long a time as would be the case if no open operation had been done. We like to use plaster of Paris, though in many instances board or metal splints have been applied for a few days until swelling has subsided.

4257 Washington Boulevard—7116 Sanborn Avenue.

THIRTY YEARS' EXPERIENCE WITH FRACTURES AT MINNEQUA HOSPITAL: TREATMENT AND RESULTS *

R. W. CORWIN, M.D.
PUEBLO, COLO.

No attempt will be made to cover the field of fractures, but this paper will briefly state how we deal with fractures at the camps, plants, and hospital of the Colorado Fuel and Iron Company which employs from 15,000 to 17,000 men; including their families, about 80,000 individuals are to be cared for medically, a task made none the easier by their speaking forty-seven languages, and by the fact that not a few understand no English.

In the period above mentioned, 11,035 fractures have been treated by us. Many of our camps are located several hundred miles from the hospital.

A patient is prepared in the following manner for transportation:

SOFT PARTS

Contusion: Application of cold or wet dressings.

Slight lacerations: Dry sterile gauze dressings.

More extensive lacerations: Meddlesome cleansing avoided. Application of wet mercuric bichlorid, diluted alcohol, normal salt or 2 per cent. solution of iodin.

The covering of a wound with dry powder or closing it without free drainage is discouraged. Iodoform and other disagreeable dressings are strongly tabooed. The patient suffers enough from his injury without being made an object of disgust to fellow passengers en route. The well may tolerate or become indifferent to offensive odors, but the sick are distressed.

HARD PARTS

1. Wrap leg in plain cotton, bandaging very loosely with roller bandage, using simply enough to hold the cotton in place.

2. Elevate the leg for convenience of applying bandage. The leg should be extended and steadied by assistant making traction on foot. The leg should now be encased. Plaster-of-Paris bandage is the simplest method of applying plaster.

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* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

3. To avoid constriction, always cut the cast on each side; also always cut bandage holding cotton.

4. Reapply upper part of cast and tie same in place with bandage, which may be easily loosened. Never fail to instruct attendant to loosen bandage if the foot swells. This sort of splint may be applied to any part of the body needing special support.

On train: stretcher and mattress, but no springs.

On arrival at the hospital: General rules (as many as practicable): preliminary examination, bath, rest, little manipulation; thorough examination, under anesthetic; *x*-ray, two planes at least; temporary dressing until shock and swelling will permit of permanent dressing.

SPECIAL FRACTURES

Cranial: General Rules: Explore all scalp lacerations, no matter how trivial; explore all severe scalp contusions, by incision if necessary.

For opening the skull, the Hudson drill is preferred.

In fracture of cranium, remove as little and replace as much bone as possible. If a large piece must be removed, place it in normal saline solution, return it to its proper place and anchor by sutures.

To control hemorrhage in diploe, apply wax or lightly pack with long fiber cotton.

In every skull fracture, give hexamethylenamin (urotropin) freely; the first three or four days, 100 grs. each twenty-four hours.

Basal Fractures: Hexamethylenamin (urotropin).

Decompression as a routine has proved somewhat disappointing, except in progressive pressure-symptoms when it should never be neglected.

The mortality from this class of cases must necessarily be high, whatever the procedure.

Facial Fractures: Next to life, deformity should be considered. Observe symmetry. Many fractures have been compound.

Check hemorrhage. Mop out wound with tincture of iodin.

Replace bones, even spicules, if there be a possibility of establishing union. Hold them in place by suturing periosteum, or by drilling bone and anchoring with chromic catgut or kangaroo tendon.

Risk closing wound without drainage; it will often heal kindly, but on first intimation of abscess, reopen and drain.

In fractures of jaw, remember that teeth are a guide to apposition.

Fine wire and dentist's clamp-bands will give greater satisfaction than external splints and bandage. They are cleaner, more easily observed and feeding is accomplished with ease.

SPINAL FRACTURES

Fractures of the spine at best are tragic. They usually mean a helpless and hopeless cripple, an object of pity, a constant sufferer, a living death, and a burden to self and friends. Often merciful would it be if paralysis from the seat of injury could extend upward as well as downward. Most of our spinal fractures occur at the mines, miles from the hospital.

Treatment: Immobilization at once, whether treated at home or transported. If the fracture be cervical, make gentle traction and support from the shoulder: if dorsal or lumbar, place patient on face between two tables. Make gentle traction and apply dressing, preferably plaster of Paris.

When to operate and when to treat otherwise, are vital questions needing prompt decision. Time may be an important factor. Theoretically, one's course is plain. When in doubt, explore. Practically, this is often unsatisfactory. Formerly our practice was to explore if in doubt. Now we hesitate. Our results are quite as satisfactory.

We never operate,

When death seems inevitable.

When the patient's consent has not been obtained.

When the case seems hopeless beyond reasonable doubt.

When the symptoms can be relieved by other means.

We hesitate to operate,

When there is profound shock.

When the case is of long standing.

When there is every reason to believe the cord is completely severed.

We operate when convinced that pressure on the cord may be relieved, whether it be from blood-clot, bone, or foreign body.

Early operations have proved more satisfactory than delayed operations.

Laminectomy under the most favorable conditions is frequently unsatisfactory, and under unfavorable environment may hasten death. Immobilization has given as good if not better results.

After treatment should be carefully considered in all operations on the spine. Incontinence of urine, involuntary stools, danger of pressure sore, lack of tendency of wound to heal, and danger of infection demand hospital and not home care.

We are resorting to expectant treatment more than formerly. We have more living proportionately to-day from nonoperative treatment than from operative treatment.

In most of our cases the injury is in the dorsolumbar region, and the fracture is usually through the body of the vertebræ.

STATISTICS ON SPINE FRACTURE

Total number of fractures of the spine (including all cases in which there were complications of internal injuries and instant death)	242
Number of cases inoperable, from complications or instant death	188
Number treated	54
Number treated by operation	18
Number treated without operation	36
Number living	25
Number operated and living (33 per cent.)	6
Number not operated and living (69 per cent.)	19

Pelvic Fractures: Dr. Moses Gunn used to say: "For fracture of the pelvis the doctor should do what is most difficult for a doctor to do; that is, do nothing." However, we find that immobilization by means of three or four 4-inch adhesive straps about the pelvis, or by plaster-of-Paris cast extending from the last dorsal to 6 or 8 inches down the thighs, for immobilizing the hip-joints, add materially to the comfort of the patient and shorten the time of repair. The usual fracture-boards should be omitted; the patient finds greatest ease in a "concave bed."

STATISTICS ON PELVIC FRACTURE

Total number in thirty years	334
Number operated on for injury of soft parts, such as rupture of bladder, urethra or rectum	16
Percentage recovering	94
Fatalities, total number	30
In cases operated on	5
In cases not operated on	25

FRACTURES OF LONG BONES

In fracture of long bones, setting accurately and retaining permanently without pressure must be our chief aim.

In simple fractures, for external support, we depend much on plaster of Paris, which in most cases, if properly applied after the disappearance of swelling, may be fitted to any position, cut so as to prevent pressure, admits of wide latitude of body movement, permits free examination of parts, is essential to cleanliness, is comfortable, inexpensive, and always at hand. When the plaster-of-Paris splint fails to accomplish all this, other splints are substituted or used in conjunction with plaster of Paris.

For internal support, when external splints have been shown to be failures by the *x*-ray, bone plating has proved very satisfactory—more so than wire, kangaroo tendon or staples. We avoid plating when tendon will serve, and are extremely cautious when there is little covering of soft parts; for instance, about the ankle. Rarely have we been obliged to remove plates on account of infection or irritation. When they have been removed, however, they have usually accomplished their purpose, and union has been sufficiently established so that external splints suffice. Frequent observation by the *x*-ray should be made that the condition of the plate may be known. Results of experiments with plates will be mentioned later.

Classification without detail is difficult, our records show the following results:

Number of fractures (About 0.5 per cent. of the 2,000,000 cases of all kinds treated).	11,035
Results have been classified under the following heads:	
Perfect results, per cent. (Those in which function has been restored and deformity is not objectionable).	66.87
Imperfect results:	
Partial—Slightly deformed, per cent.	8.75
Functionally or seriously deformed, per cent.	7.25
Wholly—Loss of function, per cent.	3.33
Loss of limb (including fingers and toes) per cent.	0.11
Death, including all in which bone fracture is a prominent feature of injury, per cent.	5.25

SOME DEDUCTIONS FROM EXPERIENCE

The first dressing of a compound wound is important; it cannot be done too carefully; it is often made worse by improper efforts. Better is it to let Nature cast off the foreign matter than to force it more deeply into the tissues by careless, meddlesome handling or too much scrubbing.

The closing of a compound wound without drainage is pernicious, and to add dry powder to a complete closure shows lack of experience. Suppuration is almost sure to follow a lacerated compound wound thus treated.

Provision for swelling is of the utmost importance; it cannot be emphasized too strongly; every physician knows that, but occasionally it is neglected.

The first examination cannot be too thorough. The condition of the patient, use of fluoroscope, *x*-ray, anesthetic and proper environment for future treatment, are of vital importance to both patient and physician.

We should neglect no opportunity to teach the laity the advantage over the home of a hospital, where there are nurses, resident physician and every convenience in case of emergency.

In head injuries the use of hexamethylenamin should be emphasized.

In spinal injuries act promptly but not hastily.

In fractures of long bones we should remember that

"Functional results are more important than anatomic accuracy."

Simple fractures, if possible, should always be treated by external support; but if reduction be difficult to obtain and maintain, unhesitatingly resort to the open method.

The patient's general condition must always be considered.

The medicolegal aspect must not be overlooked.

Danger from infection, injury to a joint, vitality of bone, and environment for operation must be weighed.

An incision should be sufficiently large to expose well the parts involved and make much manipulation unnecessary. Blind surgery involves risk.

The splint should be one that supports but causes no undue pressure, which may be removed at will for dressing or massage, and which permits the patient being taken out of doors for fresh-air treatment. Plaster of Paris will meet these requirements if properly applied and used, if need be, in conjunction with other mechanical devices.

The result of plating depends on method, material and position. Only he who is thoroughly prepared to do perfect aseptic surgery in a delicate and mechanical manner may expect uniform success in bone plating. Possibly electrolysis should be considered in connection with plate and screws of different material, or plate and screws each of two or more metals. Non-irritating material is imperative. A plate where there is little tissue over it, where the tissue is drawn over it, or where it fits poorly—or becomes loose—is apt to give trouble, and sooner or later must be removed. Better wait for swelling to subside before plating, if possible. Early plating is most apt to find firm bone.

Experiments with plates the past winter on lower animals indicated the following:

Copper and brass plates or screws irritate and produce serious pathologic changes.

Silver-plated plates, steel or iron plates and screws are non-irritating.

A plate placed on the periosteum, or on the bone where the periosteum had been removed, produced the same favorable result.

Arched or elevated plates resting as little as possible on the periosteum or bone are no better than flat plates resting throughout on the periosteum or bone.

Fortunately we are no longer obliged to resort to the Sir Astley Cooper method of reducing fractures and dislocations by bleeding, administering tartar emetic and placing patient in a tub of hot water until fainting results, in which condition, relaxed from exhaustion, the patient is treated.

Was is not Syme who said to Lister when a student, "We have reached the climax in surgery—you need look for nothing new"? That was only a generation ago. Another generation will do more for fractures than the past. Splints will no longer be needed, and plates, staples and wire will give way to a process of artificial welding, or better, artificial growing of new tissue.

Now, as a final word, I am aware of the little scientific worth of this report of thirty years' experience. It lacks detail, but detail would not improve it; but it does contain my effort of a generation, and I thank you for the privilege of presenting it; and if you will extend the privilege another generation, I will promise to give you a good report.

I wish to acknowledge the aid of my associates at the hospital, Drs. Adams, Senger, Dunlop, Schwer and Wilson, who have been of the greatest assistance to me in my work and in compiling statistics for this paper.

THE OPEN TREATMENT OF FRACTURES OF THE SHAFTS OF THE LONG BONES*

EDWARD MARTIN, M.D.
PHILADELPHIA

The limitation of the subject as indicated by the title is based on the hope that thereby there might be suggested a discussion more detailed than could have been provoked by a wider consideration.

The general indications for the open treatment of a fracture are afforded by the presence of a break accessible to intervention, which cannot be reduced and retained so efficiently that union without disfiguring deformity or crippling disability is reasonably assured. Further indications are afforded by the presence of a wound communicating with the seat of break and by non-union or vicious union.

The general indications governing the open treatment of fractures are:

1. Surgical cleanliness carried to its furthest development.
2. Operation as soon as it is clear that this is needful.
3. The securing of apposition with the least possible stripping of periosteum from bone or soft parts from periosteum.
4. The selection of an internal splint or support of the smallest bulk and of the easiest application compatible with the strength and persistence of the fixation desired.
5. Instruments and appliances which make the application of the fixation apparatus of choice easy and non-traumatizing.
6. The application of an external support which, during the period needful for union, prevents twisting and angling strains at the seat of fracture.

Surgical cleanliness necessarily implies that the fingers must not be put into the wound since patched rubber gloves often leak even before they are put on, and new ones, though they be of extra thickness, are generally torn or punctured at once if the rough bone ends are

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handled. Even in simple operations, as hernia and appendicitis, a large proportion of the rubber gloves used by the operator and his assistants are punctured. This can readily be demonstrated by blowing up the gloves after the operation and holding them under water.

Early operation is indicated because then complete reduction is most readily accomplished. Moreover, when one careful effort made under anesthesia fails to reduce, this end is rarely attained by subsequent efforts or by splints and bandages supplemented by extension; nor, if the principle of immediate operation when indicated be adopted is there need of a second anesthesia.

When *x*-rays are available, and this should be always, when operation is contemplated, they give such complete knowledge in regard to the position of the broken bone ends, that methods of examination other than inspection and measurement should be omitted, since the latter traumatize and give pain without compensating advantage.

The incision by which the fracture is reached should conform to the general principle that it is so planned as to injure no important structures, and is so placed and spaced as to make the seat of operation most accessible. Since it is rare that the convenient skin incision accommodates itself to the natural line of cleavage, the final skin suture, which should be most accurate, is sometimes difficult. The percutaneous and the lock stitch will be found serviceable.

The seat of the fracture having been exposed, apposition is secured by longitudinal pull, lateral traction, torsion and angulation.

Lateral traction may be applied by means of a metal hook passed over the broken cortex into the medullary cavity, or by tape carried around the shaft of the bone by means of a blunt curved needle.

By angling out over the arm of an assistant, the broken ends can be placed in apposition; straightening the bone then overcomes the resistance of the soft parts.

In many fractures which have not been operated on within a week of the time of injury, and particularly in old fractures, these measures of reduction often fail to overcome shortening. Unless this be so great as obviously to require resection, it can best be reduced by longitudinal traction applied directly to the upper end of the lower fragment. The simplest device for the attainment of this end is a stout canvas band, the middle of which is placed over the proximal end of the distal fragment. The two ends are then brought parallel with the limb, and into the loops with which each is provided is passed a rope, to which in turn are fastened weights.

In the case of fractured femur 100 pounds are required, sometimes double this; and we have been compelled to use nearly as great force in fractures of the forearm bones. The weights are allowed to exert their pulling effects for from five to ten minutes, traction being continued until there is an actual lengthening of about one-quarter of an inch. This over-stretching is distinctly serviceable in lessening the strain to which the buried fixation apparatus will be subject. Moreover it allows an easy apposition of the broken bone ends after the weight is removed.

Apposition having been secured, and in the least traumatizing way, at times by simple incision and slight moulding of the parts, if there be no tendency toward reproduction of the deformity and if it seem probable that the good position secured by operation can be maintained by external splints, without internal bracing or support, the wound may be closed without placing in it any foreign body. If it seem clear that a bone suture supplemented by external splinting will be adequate, kangaroo tendon may be used. If the fracture be oblique and not likely to be subject to severe strain, screws, nails, staples or even tendon suture through drill holes will prove adequate. If by none of these means can the reduced fracture be retained in position, the steel plate is indicated.

If the fracture be of the femur and transverse not only is the steel plate indicated, but one of considerable strength, particularly in fat, muscular subjects, since by no means of splinting can we put the break completely at rest or protect it entirely from twisting or angling strains.

Since the tolerance of tissues to foreign bodies is inversely proportionate to the bulk of the latter, it is of vital importance, if plates be used, that these be of the smallest size compatible with the strain to which they are to be subject.

An experimental trial of the plates sold by instrument makers has demonstrated that these break at greatly differing stress, and that in some instances the force required to break them is comparatively slight. The break usually occurs at the screw hole nearest the seat of fracture, the point of greatest strain, and, as the plates are made, the point of the greatest weakness of the plate.

Because of such an accident having happened in our clinical work, we have endeavored to secure a stronger material than that usually supplied, and have had constructed of vanadium steel, by Lentz, a plate much stronger than that now supplied and so planned that it is reinforced at the usual point of breaking. It is probable that these large strong plates will have no application in regions other than that of the thigh, but since the femur is the most difficult bone in the body to protect from cross-strain after plating, there is distinct need when operating on this bone of an implement on which entire dependence can be placed. The major advantage of the vanadium steel is incident to the fact that great strength may be secured in small bulk, and that under ordinary clinical conditions it would seem almost impossible to break buried plate made of this material.

If plating be the operation of choice, it is absolutely essential that the drill for boring the screw holes be of such size that the screws may be driven in easily and yet may cut their own threads; as manufactured, they so vary in pitch and diameter that a tap is not serviceable. Many screws should be provided so that if one drives hard it may be readily replaced by another. The screws should be threaded to their heads and be of such length that they will reach the medullary cavity and not pass far into it.

In testing plates we have found that two screws on each end of a plate, driven through one thickness of the cortex will hold beyond the breaking strain of the plate, therefore, through-and-through screws and more than four are unnecessary.

On general principles the nearer the screws to the seat of fracture, the stronger the fixation; if, however, the screws be placed nearer to the line of break than one-quarter of an inch they are likely to tear loose if subject to a severe angling strain.

The fixation of the plate is greatly facilitated by instruments which will hold it in place while holes are being drilled and screws driven home. The most universally serviceable instrument is the Lohman clamp. These smaller clamps are often useful. The Lambotte forceps, or rather Lentz' modification of it, is useful, not only as a plate holder, but as a means of accomplishing

that complete reduction which is sometimes prevented by spicules of bone.

The screw-drivers used should be those which hold the screw in jaws while it is being driven home.

When a strong plate is firmly fixed by screws the surgeon may feel that he can almost, if not quite, dispense with external support. Indeed the union seems as firm as would be, for instance, that accomplished in the same manner with dried bone. This is not the case. By twisting and rocking motions of the limb peripheral to the break, the line of fracture can always be made to perceptibly widen and close. In other words, there is always potentially slight motion at the seat of plating, or fixation by any other mechanical means. Unless this slight motion is reduced to its possible minimum by external splinting, loosening of the screws or other support is inevitable. This we have demonstrated by many experiments, having conceived the idea that it might be possible to apply an internal splint of such strength and firmness that without any external support it would hold the bone in place till healing had been accomplished. Moreover, there are many *x*-ray pictures which prove the same fact.

The after-fixation of fractures treated by the internal splint is best secured by a plaster-of-Paris casing, so applied that not only the joints on either side of the fracture are fixed, but that the muscles which act on the bone ends are also for a time kept at rest. This implies in fractures of the leg bone an envelopment carried up to the middle of the thigh. In fracture of the femur a cast from the foot to the ribs. In the forearm bones a cast from the midphalangeal joint to the shoulder. In the arm bone a casing including the shoulder and extending to the midmetacarpal region. These casings should be split while soft so that in part they can be removed, allowing the seat of operation to be inspected and massage and passive motion to be applied as soon as advisable.

As to the results of the open treatment of fracture, many are good, some indifferent and a few distinctly bad.

It is noteworthy that union is usually delayed, that the time of treatment is not materially shortened, that the results are not uniformly good. But, taken as a whole, they are infinitely better than could possibly have been secured by other than operative means.

Even in the cases clean at the time of operation, there have been a few instances of infection; this infection has, however, in two of my cases of femoral fracture, been of a peculiar type, becoming manifest in about three or four weeks after the time of operation and characterized in the meantime by a very slight elevation of temperature well below 100. The infecting organism was the *albus* and had no communication with the plate or seat of fracture, involving the subcutaneous tissues alone. In one instance, for example, the indolent abscess, formed some weeks after operation, was not even near the site of incision.

There has seemed to be a relation between the size of the internal splint and the promptness of final union. In other words, we have felt that the less foreign matter we put in the wound the quicker it got well.

As to the fate of the plates: We have taken them out unnecessarily, finding them clean and as firmly fixed as though they had been driven into wood. We have taken them out because of continued suppuration. We have left them in now for years nor have they excited any untoward symptoms. A woman recently presented herself, who was plated five years ago. She made a fairly prompt and complete recovery. For the last three months she suffered from pain in her leg. She had a varicose ulcer beneath the outer malleolus and a softened area over her plate in the lower third of the tibia. This had been perfectly quiescent in the intervening time. When proper support was given to her dilated veins the pain disappeared, as did the softened area over the plate, and she became completely able-bodied. What proportion of these buried plates, if any, give subsequent trouble remains yet to be proved.

Given the proper tools and appliances and intervention shortly after the injury, the operation is usually not a difficult one. Having performed it, we regard the subsequent external splinting as equally important in the securing of an ultimate satisfactory functional and cosmetic result.

ABSTRACT OF DISCUSSION

ON PAPERS IN THE SYMPOSIUM ON FRACTURES BY DRS. CORWIN, MORRIS, MARTIN, AND BARTLETT AND HEWITT

DR. HERMAN E. PEARSE, Kansas City, Mo.: I like to operate early. I have been told that it is better to operate late. I find a bone is the crystallization of lines of force, and that the crystallization ceases when the force is not applied, and begins again when it is applied; and so, if two pieces of bone overlap badly, I find rarefaction of bone, and the screw holds better if these cases are plated early.

As to cleanliness, we do not boil long enough; we do not get the skin clean enough; it is useless to paint it with iodin and begin to operate. It is criminal. It seems to me that every one who intends to do this work should at least read and follow the preparatory technic of Mr. Lane, which has been worked out by fifteen years of constant application. Nothing short of that is safe.

I have examined the stock of splints at different surgical instrument houses. They are all useless. They are all less than the minimum weight shown by Dr. Martin to be proper. They are capable of being bent readily between the thumb and finger and they break easily and will not hold. I commend particularly the remarks of Dr. Martin as to the weight, strength, size and material of splints.

I would again urge your attention to the remarks of Dr. Martin in which he speaks of the external application of splints. This external application should be made, but not by any means for so long a time as suggested. In the conduct of the fracture wards of our general hospital of some 300 beds (in an active city like Kansas City, many people are hurt). I have had occasion repeatedly to see most disastrous results from neglecting this. The proper internal splinting of the bone, with the closing of the external wound, gives such a degree of security that the limb is used with entirely too much freedom, unless motion is thoroughly restricted.

I should like to request those very active minds who are so constantly improving the size and the shape and the material of Mr. Lane's splint, and who are in so many ways improving the technic by shortening it, that before any further attempts are made to improve this operation, they prove out the technic as already established. For reproach is being brought on this operation by death from suppuration and by splints that are literally vomited forth when carelessly placed with poor technic. It is worth while to study the technic of the master who has placed this matter where it is, before attempting to improve it on reading his literature.

DR. FRED B. LUND, Boston: We have treated fractures entirely by external apparatus, and the reason is that until the worth of Lane's plates was proved we had no other method of treating them. I know that for several years, with external apparatus alone, we have been getting a great many bad results; and I, too, was impressed last summer, as Dr. Bartlett was, with seeing the application of Lane's plates. I have tried them and I have succeeded and I have failed; but I sincerely believe that this is the first efficient means of internal

splinting that we have had at our command, and that it will prevent a good many malunions and a great many non-unions and much suffering; and if proper attention is paid to the technic and a proper instrumentarium provided, as Dr. Martin and Dr. Bartlett have so wisely insisted, it is going to do a great deal of good.

But nobody should attempt these operations without a study of the methods of the master, Mr. Lane, and providing himself with as complete and perfect a set of instruments as he can get. I think that Dr. Bartlett's traction apparatus is going to be a great help and will greatly lessen the labors of the operator. It substitutes a perfect and powerful mechanism for the imperfect and comparatively weak aid of an assistant.

I have treated thirteen patients since last October, as follows:

(1) An old ununited oblique fracture of the femur in bad position; united in perfect position after plating. (2) A very bad, old, oblique fracture of the upper end of the femur without union four months after the injury; good results from plating four months after operation. (3) A bad transverse fracture of the femur plated, with failure, partly through bad technic and partly through lack of efficient external support. (4) Malposition accompanied by great pain in a transverse fracture of the humerus ten days before in a woman of 60, in which case external apparatus was unsuccessful; perfect result from plating. (5) Ununited fracture of both bones of the forearm four months after injury, with interposition of the muscle between the fragments of the ulna; plating, with very good anatomic and perfect functional result; ulnar plate had to be removed at the end of three weeks. (6) Malposition in fracture of both bones of the forearm, plated; both plates had to be removed at the end of ten days; the result was good. (7) Spiral fracture of the tibia with very poor position; perfect anatomic and functional results from plating. (8) Angular deformity fracture of both bones of the leg, three months after injury. Excellent results from plating.

The prolonged suffering which men get with non-union and malunion makes it worth while to operate on these cases and to use efficient operative means to secure good results. If one takes the trouble to learn how to plate these cases and to do the operation skilfully, the results are more than satisfactory.

DR. W. LE MOYNE WILLS, Los Angeles: The greatest advantage of this method is that by the proper application of apparatus you can maintain from the first, perfect apposition of fragments. I operated on a patient by the Lambotte method two years ago. This case was one of epiphyseal fracture of the head of the left humerus. Seven days after the patient was hurt in the mountains, I operated on him. The effect is really not cosmetic; but he does not wear a low-necked dress. He now works in a brass foundry. He has a perfect functional result and I have the plates to prove it.

I have never claimed that this is an ideal method. It is not applicable to all cases. Nobody should do this operation who has not seen Lambotte do it or one equally skilled in use of his apparatus. I would be willing to have it used in case of fracture of my own femur.

When I reported nine cases two years ago at the San Jose meeting of the California State Medical Society, and admitted 25 per cent. of infection, I was severely criticized for that. I operated in this case since I reported those other cases. A man often does not admit that pus is present in his own work, but always sees pus and bad results in other people's work. It is a case of the beam and the mote. I have tried to be honest and report failures. But there is a perfect functional result in the case presented.

DR. WILLIAM FULLER, Chicago: It is my belief that practically every fracture, regardless of its location, type or kind, that is difficult to reduce or difficult to hold reduced, should be treated by the open method. On the other hand, fractures without obstacles to reduction, and calling for simple devices or means to retain the fractured ends of the bones in apposition, should be managed by non-operative measures.

I desire, especially, to endorse some of the points brought out in the papers by Drs. Martin and Bartlett. As to the somewhat complicated apparatus which is described and used by Dr. Bartlett for exerting traction on the extremities, it undoubtedly has a place in this work, but I am inclined to the opinion that it would be the exception. Personally, I prefer two strong assistants, besides the one directly concerned in the operation, who can generally make sufficient traction and counter-traction, evert or invert the limb, or employ other desired manipulations at a moment's notice. This leaves the operator and his first assistant free, and removes the necessity of touching anything but the instruments and the field of operation.

The dangers resulting from the open method of treating fractures are, in reality, slight. It has not been shown, to my knowledge, that tissues surrounding broken bones are more susceptible to infection than tissues elsewhere. If the organs within the abdomen were subjected to the same rough handling observed sometimes in operating on fractures; the stomach drawn out with vicious-looking hooks, the gall-bladder ablated without regard for adjacent structures, abdominal surgery would not stand where it does to-day. Tissues covering a fractured bone will heal just as kindly and promptly as abdominal tissues, if treated in the same careful, surgical manner. It is true that at present suppuration more often follows bone operations than other operations, but the reason is plain.

Just a word with reference to the postoperative treatment of fractures: Besides complete hemostasis, and accurate wound closure, nothing is so important in promoting satisfactory progress of the wound as extreme elevation of the extremity. It has a decided beneficial effect in preventing, as well as subduing, infection. The limb does not swell, all edema immediately disappears, the circulation is perfect, and pain is much less severe. This elevation is not accomplished by pillows, but by placing the limb on a well-padded splint, which should be suspended by pulley or otherwise at a right angle to the bed.

DR. JOHN ROGERS, New York: The general impression which we carry away from this discussion is that "bone plating" is the best thing there is. I have had considerable experience with fractures in Bellevue. We have probably the largest collection of fractures there in the city. We have about fifteen or twenty surgeons there—all competent. Directly after this fixation method was first exploited, I think every fracture in the hospital was plated. As a result (I speak for myself as well as the others) we spent considerable time in taking these plates out. But there was one man in the institution who carried through his work with apparent perfect success, and I think he had only one failure out of fifty cases. On studying this result, to see why it was very much better than the results of the rest of us, I found that he had a complete set of these instruments, and kept his fingers entirely out of the wound. The rest of us were using the ordinary hospital appliances which were at hand and they were defective in the bone holder and one or two of the other instruments; and every one of those cases, in which the fracture was handled manually, suppurated, so far as I know. So not enough stress has been laid on the technic of doing these operations. Unless you have every appliance as originally introduced for holding these bones in place, do not try the operation. A little improvement on that bone-holder can be made by constructing it in the form of an obstetric forceps; so that the spread does not have to be so wide when the blades are put in the wound; but all the appliances must be employed or there will be trouble.

DR. FRANK WARNER, Columbus, O.: I wish simply to emphasize the importance of position in the treatment of these fractures to prevent strain on the fragments. The surgeon should remember that if it be a fracture at the upper end of the femur, the tendency of the upper fragment is to draw forward and outward; consequently in the treatment of that fracture if plates have been applied or the fragments wired, the thigh should be dressed in flexion so as to avoid strain on the plates or wires. A fracture in this or in any other location, should be handled constantly with the cardinal thought in mind of preventing tension on the plates or wires by dressing the limb in such a position as will mean the least muscular tension on the fragments, for there is a constant tendency for any undue strain to break the wires or loosen the

screws. As for example, take a fracture of the femur above the knee-joint; the tendency there, is of course for the gastrocnemius to draw the lower fragment back; so that in this locality the fracture should be treated with the leg flexed. The fractured member should be dressed in the same position as if there were no plate or mechanical appliance used to hold the displaced fragments in apposition. By adhering to this rule, less tension is put on the plates or wires by removing the muscular strain on the fragments. The splints should be constructed with proper windows so that the dressings may be changed without strain being put on the fragments. Or, if it be not practical to use a window, then in changing the dressings the greatest care should be exercised that as little strain be put on the fragments at that time as possible. Otherwise the wires will snap or the screws will become dislodged. A point equally important is that the surgeon himself or some one properly qualified should take care of the patients after operation. It is easy to have this operation made a failure if the surgeon looks after the patients only casually and occasionally, and substantially turns them over to an intern, an extern or a nurse to make the dressings. The success of the result will be in proportion to the subsequent personal attention given the fracture.

DR. REXWALD BROWN, Santa Barbara, Cal.: The kinds of apparatus now in use sometimes have discouraging features. Wires break and Lane's plates and staples frequently pull out or break because of leverage following their application. Lambotte and Parkhill apparatus invite infection, for along the screws are open pathways directly from skin to bone. Buried material only deserves attention: how much foreign material can be buried is open to investigation. The good reports following use of metal half-cylinders—a not inconsiderable foreign body—led me to devise a clamp which seems to have advantages over others used. [Dr. Brown then exhibited his clamp and explained the method of its application, all of which will be described in a paper to be published elsewhere.]

DR. R. W. CORWIN, Pueblo, Colo.: I should suggest that the plates be made thinner and smaller than some that have been devised. All who have seen Mr. Lane's work must appreciate the care he employs, and too much emphasis cannot be laid on this point. Iodin is of value in some cases, notwithstanding our Kansas City friend's views.

THE CLINICAL THERMOMETER AS A POSSIBLE DISSEMINATOR OF SOME COMMUNICABLE DISEASES *

EDWARD B. BEASLEY, M.D., D.P.H.
BALTIMORE

Until the discovery of the rôle played by insects in the transmission of disease, an air of mystery hovered over the means by which certain diseases were communicated. Probably no disease illustrates this point better than malaria. About twenty years ago, malaria was attributed to the miasmatic emanations which came, during the night, from marshes and swamps. When the anopheles mosquito was discovered to be the host of the malarial parasite, the puzzling atmosphere which had hitherto enveloped malaria vanished, and the etiology of one of our mysteriously transmitted diseases was placed on a scientific basis. We now know that the habits of the anopheles mosquito—so far as biting is concerned—are nocturnal and that marshes, swamps, etc., are its breeding-places.

At one time the fomites theory was regarded as practically the only way in which communicable diseases could be spread. This theory afforded such a simple and easy explanation of the subject that it became deeply rooted in the minds of both the medical profession and the laity. The discovery of bacillus-carriers and the recognition of mild cases (formerly unrecognized) of certain communicable diseases have contributed toward the displacement of the fomites theory, and sanitarians are relegating this theory to a rather minor position in the dissemination of communicable diseases.

The clinical thermometer, however, is an object which must be reckoned with when dealing with the spread of communicable diseases. The etchings on the clinical thermometer form ample harbors for countless bacteria. Very careful washing and drying, after use, will remove most of these organisms, but some will remain and they might as easily be of the pathogenic type as of the harmless variety. If an accurate clinical thermometer could be manufactured with an inner scale instead of the etchings, this source of danger would be partly avoided, but the construction of an accurate thermometer of such a type is, at the present time, mechanically impracticable.

It is a matter of serious regret that most thermometers receive a scant washing and drying after use. The presence of the mercury precludes the use of hot water and consequently a most careful washing becomes imperative, especially where no disinfectant is used. Only too often the thermometer is merely dipped in a glass of water and wiped; or else it is held momentarily under some running water and then dried.

It has long been contended that physicians, from time to time, spread communicable diseases. That their clothing on rare occasions has been responsible cannot be denied, but a more likely agent is the clinical thermometer which is used from person to person without the proper amount of care being taken in regard to its cleaning.

To test the bacteria-carrying power of clinical thermometers, a series of experiments was undertaken. Some thermometers were made, by a very well-known firm, to resemble clinical thermometers in every respect except that they contained no mercury. The mercury was left out so that these dummy thermometers could be easily sterilized by heat during the experiments.

Pure (twenty-four-hour) cultures of *Bacillus prodigiosus* and *B. pyocyaneus*—grown in Dunham's solution—were used to infect the thermometers. The general scheme of the experiments was to rinse the mouth for half a minute with the culture of *B. prodigiosus* and a sterile thermometer was then placed under the tongue. At the end of one minute the thermometer was removed and treated in one of the ways described later. Only one thermometer was infected after each rinsing with a culture. The method of procedure with the culture of *B. pyocyaneus* was identical with that of *B. prodigiosus*. These two organisms were selected as they are easily identified in mixed cultures and it is perfectly obvious that the thermometers must be infected, after use, with many varieties of bacteria found in the mouth. An additional reason for working with *B. pyocyaneus* was its pathogenicity, as it is this type of organism that we are most anxious to learn as much as possible about.

After treatment, the thermometers were dropped in sterile tubes containing Dunham's solution. This medium discourages heavy growths of most organisms and it has an inhibitory effect on oral bacteria as it is practically sugar-free. Those thermometers infected with *B. prodigiosus* were allowed to remain in Dunham's solution for twenty-four hours, at the end of which time a sterile platinum loop was inserted and several loopfuls were transferred to some sterile potatoes. Those ther-

* From the Department of Preventive Medicine and Hygiene, Harvard Medical School.

mometers infected with *B. pyocyaneus* were allowed to remain in the solution for four days, or until the green fluorescence of this organism appeared.

B. pyocyaneus is occasionally found in the mouth and there are also, at times, three organisms (*B. buccalis fortuitus; Bacillus b* of Vaginal and *Micrococcus doseus*) present in the mouth whose growth on potatoes might be confused with *B. prodigiosus*. In addition, tap-water, once in a while, contains some one of these organisms and consequently it was thought advisable to carry controls through with the infected thermometers. Great care was taken to see that the thermometers were kept free from outside contamination and during their exposure they were handled with sterile thumb-forceps. The controls throughout the entire series were negative.

The particular methods used in caring for the thermometers and the results are tabulated below: (+= growth; —= no growth.)

SERIES I

After infection, the thermometers were rinsed in a glass of water for half a minute.

B. prodigiosus			*B. pyocyaneus*		
Trial 1	24 hours	result +	Trial 1	24 hours	result +
Trial 2	24 hours	result +	Trial 2	24 hours	result +
Trial 3	24 hours	result +	Trial 3	24 hours	result +
Trial 4	24 hours	result +	Trial 4	48 hours	result +

SERIES II

After infection, the thermometers were held under running water for one minute.

B. prodigiosus			*B. pyocyaneus*		
Trial 1	24 hours	result +	Trial 1	48 hours	result +
Trial 2	24 hours	result +	Trial 2	48 hours	result +
Trial 3	24 hours	result +	Trial 3	72 hours	result +
Trial 4	48 hours	result +	Trial 4	72 hours	result +

SERIES III

After infection, the thermometers were rinsed in a glass of water for half a minute and then carefully dried with sterile gauze.

B. prodigiosus			*B. pyocyaneus*		
Trial 1	24 hours	result +	Trial 1	96 hours	result +
Trial 2	24 hours	result +	Trial 2	96 hours	result +
Trial 3	24 hours	result +	Trial 3	72 hours	result +
Trial 4	24 hours	result +	Trial 4	96 hours	result +

SERIES IV

After infection, the thermometers were held under running water for half a minute and then dried with sterile gauze.

B. prodigiosus			*B. pyocyaneus*		
Trial 1	24 hours	result +	Trial 1	96 hours	result +
Trial 2	24 hours	result +	Trial 2	96 hours	result +
Trial 3	24 hours	result +	Trial 3	96 hours	result +
Trial 4	24 hours	result +	Trial 4	96 hours	result +

At this point *B. pyocyaneus* was abandoned for further experimental work with the thermometer as its fluorescence appeared both slowly and faintly.

SERIES V

After infection, the thermometers were kept under running water for three minutes and then wiped dry with sterile gauze.

B. prodigiosus

Trial 1	24 hours	result +
Trial 2	24 hours	result +
Trial 3	24 hours	result +
Trial 4	24 hours	result +

SERIES VI

After infection, the thermometers were rinsed in running water for half a minute, then dried with sterile gauze. They were then allowed to remain in sterile thermometer cases for half an hour before being placed in Dunham's solution.

B. prodigiosus

Trial 1	24 hours	result +
Trial 2	96 hours	result —
Trial 3	24 hours	result +
Trial 4	24 hours	result +

SERIES VII

After infection, the thermometers were treated similarly to those in Series 6, except they remained in the sterile thermometer cases for one hour.

B. prodigiosus

Trial 1	24 hours	result +
Trial 2	24 hours	result +
Trial 3	96 hours	result —
Trial 4	24 hours	result +

SERIES VIII

Identical treatment as Series 6, except the time in the sterile thermometer cases was increased to two hours.

B. prodigiosus

Trial 1	24 hours	result +
Trial 2	24 hours	result +
Trial 3	48 hours	result +
Trial 4	24 hours	result +

SERIES IX

After infection, the thermometers were put under running water for half a minute, wiped dry with sterile gauze and then placed in sterile thermometer cases for three hours before finally being transferred to Dunham's solution.

B. prodigiosus

Trial 1	96 hours	result —
Trial 2	24 hours	result +
Trial 3	24 hours	result +
Trial 4	24 hours	result +

In looking over these experiments, it will readily be seen that the dummy thermometers had superior advantages (in being freed from the infecting bacteria) over the thermometers in actual practice. In most communicable diseases the saliva of the patients is thickened and in some diseases it is very tenacious. This condition would naturally give the bacteria a much better opportunity to adhere to the thermometer than where the saliva is thin and normal. The experimental thermometers were held under the tongue for only one minute, whereas, ordinarily in practice, they are allowed to remain from three to five minutes to insure good registration. In addition, the experimental thermometers were always washed immediately on being removed from the mouth, which fact did not allow the saliva to dry and become fixed. On the other hand, it would appear that conditions in actual practice seldom occur similar to those in Series 1. However, where two or more members of one family are ill at the same time, a careless physician might simply rinse his thermometer for a few moments and then use it on the second patient. Series 9 shows that a thermometer can retain live bacteria—capable of being recovered—after the thermometer is fairly well washed, dried and then placed in a case for three hours. Physicians in active practice must use their thermometers at more frequent intervals than this.

There are many diseases which might possibly be transmitted by clinical thermometers. Scarlet fever, diptheria, mumps, measles, typhus fever, cerebrospinal meningitis (epidemic form), acute anterior poliomyelitis, small-pox, whooping-cough, typhoid fever, tonsillitis, coryza, pneumonia, cholera, plague (pneumonic type), grip and some forms of tuberculosis may be mentioned as some of the diseases which might conceivably be disseminated in this manner.

In conclusion, it would seem necessary that physicians should keep their thermometers immersed in a true disinfectant if they would eliminate this source of danger to their patients. Formaldehyd solution would be a most satisfactory substance to use as, in contra-distinction to phenol (carbolic acid), it does no damage to the etchings of the thermometer. Until the city and state health departments give some attention to this subject, everybody who can afford to do so, should provide himself with a reliable clinical thermometer in order to avoid the use of an outside one which might prove to be the origin of some communicable disease.

EMPIRICISM AND PHARMACOLOGY IN THE MANAGEMENT OF POSTOPERATIVE CASES *

S. T. POPE, M.D.
WATSONVILLE, CAL.

I never saw a purple cow—
I never hope to see one;
But I can tell you anyhow
I'd rather see than be one.—*Gelett Burgess.*

I've never been a "postoperative case"—and I'd rather see than be one. I am sorry for any one who must be a "case" of any sort, but most sorry for those who in their postoperative experience have had insult added to injury.

It is not long ago that we tied together the thighs of our patients in perineal cases; enforced a strict dorsal decubitus on our celiotomy patients; denied them water for days at a time; forbade them food; refused to abate their sufferings with anodynes for fear of intestinal stasis; purged them unmercifully on the second or third day, and perhaps shot them full of nuclein. Patients have often said to me: "Doctor, I did not mind the operation, but really if I had to be scrubbed as I was, and must go without water for three days as I did, I would rather die than submit again to such an experience."

And while we are somewhat less strenuous to-day, still there is plenty of room for improvement in our after-treatment. These errors in judgment, on our part, are due to excessive solicitude.

In the first place, we starved our patients prior to their operation, fearing to have food in the bowels. The way some people hate their intestinal canals is a shame. One would think, to hear the average doctor talk, that the source of all earthly danger originates in this tube. We starved them so successfully before and after operations that many patients, when subjected to the toxic influence of an anesthetic, developed a fatal acidosis.

Acting on the assumption that postanesthetic vomiting called for an interdiction of food, we heightened the degree of this acid intoxication by further starvation. Or if we did give food, it was of such a nature that it was poorly calculated to combat the development of acid intoxication. We gave beef-tea or malted milk when we should have used carbohydrates, such as baked potatoes, cornstarch pudding or mush. I have often seen postoperative vomiting which had resisted all palliative measures cease immediately after the giving of these substantial starches.

Conti, in the year 1895, first demonstrated the presence of acetone in the urine after general anesthesia, but it has taken fifteen years for this danger-signal to arouse some of the medical profession. Ladd and Osgood[1] reported that, in 173 ether anesthesias by cone, 88.5 per cent. of the patients later showed acetonuria, while of 222 anesthesias by the drop method, 26 per cent. became acetonuric.

The administration of alkaline substances as an antidote is markedly beneficial in this condition, yet this measure is seldom employed or, if used, in such insufficient quantities that no advantage is gained.

We must recognize that the factors at work in the production of the acetone complex are active and large, and oft-repeated doses of basic salts must be absorbed. If sodium bicarbonate be employed, it will require several ounces a day, given by mouth, colon, or hypodermically, to neutralize the acidemia.

After all general anesthesias, it is a good procedure to let the patient drink repeatedly, at intervals, a glass of water containing a dram of sodium bicarbonate. If this is vomited, it serves as a good gastric lavage; if retained, it tends to forestall acid intoxication.

For colon absorption, sodium bicarbonate can be added to the normal saline in a 2 per cent. solution.

For intravenous or subcutaneous injections, 1 per cent. sodium bicarbonate or sodium citrate solutions have been used, but neither is to be recommended except in extreme emergency, because of its hemolytic action on the blood. Food and proctoclysis will usually do all that is necessary to combat acidosis.

Closely associated with the subject of starvation is that of catharsis. It must have been because intestinal stasis is a prominent feature of peritonitis and postoperative ileus that in the past, and partially in the present, we have feared fecal retention. As a consequence, we have brought our most potent charms to work on this innocuous symptom.

The existence of constipation is no more harmful in a postoperative condition than in normal health, and in the normal state its effects are purely mechanical.

It is true that some gas distention or fecal impaction may add to the discomfort of the patient, of course I do not here refer to massive impactions (which in themselves constitute a pathologic lesion); but constipation itself has never been proved a source of intoxication. The experiments of Alonzo Taylor[2] absolutely demolish the contentions of those timorous physicians who so urgently plead for purgation. Taylor has shown that in the absence of a definite infection, no toxic absorption results from intestinal stasis. Where there is an infected bowel, there is always diarrhea.

Auto-intoxication is a state of mind, and the effects of cathartics are largely psychic. Indican is not a criterion of intestinal intoxication. Experiments on dogs, in which the intestine is ligated to simulate constipation and an invasion of bacteria into the portal circulation, with subsequent bacilluria result, are not to be taken as homologous to simple retention of feces.

Strasburger has shown that the bacterial content of the bowel is about 60 per cent. of the dried residue; and that in constipation this is reduced, while in diarrhea or after purgation the percentage of bacteria is increased. For this reason William Mayo refrains from giving any cathartics immediately before operations on the colon.

Not only is the routine administration of cathartics unnecessary, but it is frequently harmful. After the ingestion of calomel it is always possible to detect occult blood in the stools. It is simply another toxic element

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Ladd and Osgood: Ann. Surg., 1907, xlvi, 469.
2. Taylor in Osler's Mod. Med., I, 273, 274, 276.

in the system, and does not inhibit the growth of intestinal bacteria.

Magnesium sulphate is a decided cardiac depressant. It also has the capacity for abstracting needed water from the tissues, something that is exactly contrary to the demands of the occasion.

In fact, it should be our effort to keep the body well saturated with water before an operation. It is also true that the flat bowel of purgation, one whose muscular tone has been depressed by some cathartic, is that which later suffers most from distention.

And probably another demonstration of the paretic effect of chronic purgation is shown by the surgical cases recently reported by Lane, Finney and Mayo—those of colonic atony, redundancy, supposed fecal stasis, and auto-intoxication. Finney is unable to account for this atony; the habitual use of cathartics should be considered.

The bowels should be in a normal state for the average operation. This is best achieved by a restricted diet, low proteids and devoid of uncooked food. Vegetables that have not undergone the sterilizing process of cooking are a distinct source of danger at this time.

An enema on the morning of the operation is all that is necessary to relieve the colon of its contents and establish the most favorable intestinal condition. And on the resumption of feeding, the bowels will often move spontaneously about the fourth day, or if gas distention causes discomfort, or fecal masses in the sigmoid or rectum distress the patient, an enema will relieve the condition quite as thoroughly as a purgative, and will do no damage.

Certainly in postoperative vomiting or ileus or peritonitis, cathartics only add to the intestinal insult. It seems a hard lesson for us to understand, that in the absence of a definite endo-intestinal infection, it is not what is on the inside of the bowel that is doing the damage, but what is on the outside.

And in the use of enemata it is high time that we abandon the colon tube. Soper and many others have confirmed our suspicions; it is a miracle and a definite act of Providence when a colon tube ever enters the colon. It simply coils up in the rectum or sigmoid—in fact, it should be called a rectal dilator.

Fortunately for us, a high enema is not dependent on the necessity of being injected high. Any fluid placed in the rectum will be propelled into the colon by the normal reverse peristalsis. A short rectal tube is just as efficient as a long colon tube is supposed to be.

Where pain exists to a distressing degree after operations, we certainly have little justification for withholding morphin. By lessening pain we lessen shock and the possibility of postoperative ileus.

Yandell Henderson proposes the theory that excessive respiratory excursions produce an exhaustion of bodily carbon dioxid on which the respiratory center depends for stimulation. In the absence of carbon dioxid this center ceases activity, respiration stops, and a pathologic condition results, which he terms "acapnia," the circulation continues until oxygen failure ensues, vasomotor balance is destroyed and a vital crisis exists—this is shock.

Pain, by inducing rapid and full respirations, precipitates this condition—one actually gasps oneself to death.

It is also true that severe pain in any part of the body may produce meteorism. Bloating with gas may be just as marked from gall-stone colic as from strangulated hernia.

Morphin does not favor the production of ileus. It does constipate, but the production of one single cardinal symptom surely does not establish the disease. Used with judgment, morphin is a beneficent agent after operations. It masks nothing from the discerning eye; it fools only the foolish.

And when ileus does follow operations, the question first must be decided, is this mechanical or is it functional? Many patients are treated palliatively who should have their abdomens reopened.

If ileus really exists, its treatment is as varied as its nature is problematic. Certainly cathartics are to be excluded—they only excite reverse peristalsis.

Of all the enemata employed, from milk and molasses to kerosene oil, none have proved of constant value. In my own experience, alum—1 dram to the pint—has seemed to be of some service every time it was used.

In the treatment of tympanites and hiccough, the giving of carminatives, such as peppermint, Hoffman's anodyne, turpentine, and oil of wintergreen should never be permitted. These drugs should be relegated to the family medicine closet and never allowed to enter a serious situation of this nature. Their use is irrational and wholly futile.

Gastric lavage affords considerable relief. The hypodermic administration of physostigmin (eserin) has always seemed to me to be of benefit whenever it was used. This drug must be pushed to its physiologic limit.

Whether the demonstrations of Crile or the experiments of Henderson have proved the nature of shock or not, at least they have made it clear that the hypodermic medication usually indulged in at this time is foolish.

To employ nitroglycerin, digitalin, strychnin, ether, whisky, musk and camphorated oil indifferently, with an idea of helping the patient who is suffering from surgical shock, is simply shocking.

The person who indulges in this spectacular therapy has little conception of the physiologic discord with which he is contending, and less notion of the action of his drugs. To attempt to stimulate an already exhausted vasomotor center with an excitant like strychnin or a vasodilator like nitroglycerin is comic medicine.

The only saving feature of the whole performance is the fact that the usual hypodermic tablet is such an insufficient dose that it has little power for harm.

Oxygen, salt solution and epinephrin are the only chemical agents that have a legitimate excuse for being used in this emergency. Other measures, of course, are of service, but these are posture tongue traction, compression of the limbs, and heat.

Salt solution can be used to excess, let it not be forgotten, although Mummeny[3] has shown that salt solution has the power of transporting oxygen to the tissues, a state of hydremia should not be produced.

It is better to use conservative measures such as constriction of the extremities, than to flood the organism with water. Thiers has shown the advantage of using a combination of salts, sodium chlorid, calcium chlorid, and potassium chlorid, rather than the usual sodium chlorid solution.

In simple collapse no drugs are indicated. Here the physiologic balance of the vasomotor system will adjust itself, if given time. Where this fall in blood-pressure is due to moderate hemorrhage, it is probably a conservative action tending to produce hemostasis and coagulation.

3. Mummeny: Lancet, London, 1905, i, 696, 776, 846; ii, 780.

Our forefathers, in performing venesection, nearly always bled the patient until he fainted. I have frequently abstracted a pint or a quart of blood, in conditions that seemed to warrant it, and had my patients faint, lose the radial pulse, sweat, have their heart-sounds become almost inaudible, though the carotids could be seen beating slowly and rhythmically, the respiration unhurried. I have not been alarmed but, giving them due time, watched the return of vascular balance unaided and unimpeded by medication.

There are other conditions, however, arising post-operatively that require chemical therapy. One of the most frequent situations comes from infections of the urinary tract, incident to catheterization.

It is lamentably frequent that one undergoes a surgical operation for one pathologic feature, and develops another in its place. Many women, taking advantage of modern surgery to gain relief from some pelvic disease, come from the hospital with an unrecognized cystitis. Later they have an ascending infection and a pus kidney.

In every case demanding catheterization, hexamethylenamin should be given in sufficient doses, well diluted with water, to act as a prophylactic against this ubiquitous pest.

The experiments of Crowe[4] at Johns Hopkins Hospital, relative to the inhibitory action of hexamethylenamin on infections of the meninges, gall-bladder and serous cavities in general, should be sufficient to prompt the employment of this valuable drug in lesions or operative maneuvers involving the brain, spinal cord, gall-bladder, joints and urinary tract.

Many cases of supposed post-partum infection really are acute renal infections from a latent cystitis, or traumatic ureteritis. This is the frequent and unrecognized cause of puerperal fever.

It would be a highly salutary routine to give hexamethylenamin in every case of confinement, since 20 per cent. of all pregnant women present infected urinary tracts to some degree.

And more might be said on the subject, were it not that I have said too much already, and less would have been said were I wiser than I am.

But the burden of my story is this—that we do a lot of stupid things through thoughtless imitation of other men; that we should try to have a reason for what we do; that we should be governed more by the well-proved experiments of modern research, and that simplicity should be the dominant element in postoperative treatment.

401 Third Street.

Medical Research.—There is no realm, however, in which the deep satisfaction of seeing discovery applied to human service, is more likely to be experienced than in the realm of medical research. Consider how great must have been the joy of Pasteur and of Lister when they realized that the consequences of their investigations must lessen forever plague and pestilence and pain in men, and in the lower animals as well, and must permanently remove much of the blind struggle against mysterious agencies of disease and death. The letter which Walter Reed wrote to his wife on New Year's eve, 1900, at the end of his experiments on the transmission of yellow fever, tells something of the joy of such service—"The prayer that has been mine for twenty years," he concludes, "that I might be permitted in some way or at some time to do something to alleviate human suffering, has been granted! A thousand happy new years." And a thousand happy new years there will be for thousands of men and women and children, because of that one research in Cuba.—Cannon in *Science*.

4. Crowe: Bull. Johns Hopkins Hosp., 1908, xix, 109.

A CLINICAL STUDY OF MOBILITY OF THE HEART *

DUDLEY FULTON, MD.

Assistant Professor of Theory and Practice of Medicine, University of California (Los Angeles Department); Attending Physician to the Los Angeles County Hospital

LOS ANGELES

It has long been known from bedside study, and more recently from the use of the *x*-rays, that the heart occupies no fixed position in the thorax. The heart is held suspended by its large vessels and is in intimate relation with the walls of the thorax, the mediastinal tissues, the lungs, and the diaphragm. It is evident that the position of the heart may, therefore, be modified by abnormalities of any of the supporting structures, as mediastinal tumors, pleural effusion, pulmonary disease, particularly deformities resulting from tuberculosis, and by abdominal conditions which modify the position of the diaphragm, such as enlargement of the liver, ascites, intra-abdominal growths, and pregnancy. The physiologic factors which modify the position of the heart are, (1) respiration and (2) changes in the position of the body. I have concerned myself only with the latter in this study. Other causes of cardiac displacement will be mentioned only incidentally.

Cherchevsky[1] first called attention to abnormal mobility of the heart. In forty cases studied to determine the effect of changes in position of the body on the apex-beat, he found the mobility to be normally from 1.5 to 3 cm. In nineteen cases it varied from 4 to 7.5 cm.; there was slight mobility in six cases and no movability in fifteen. He considered a range of mobility exceeding 3 cm. as abnormal. In arteriosclerosis, mobility was greatly diminished or absent.

Rumpf[2] concluded from a similar study that the absolute as well as the relative heart-dulness is normally movable about 2 cm. to the left in the left lateral position, and 1.5 cm. to the right in the right lateral position. In many cases the apex-beat remained in the same place, but it often showed a displacement of 2 cm. in a change of posture. Rumpf described five cases, in which the mobility of the heart toward either side amounted to 4 cm., which he designated as "movable heart."

Pick[3] examined 1,000 healthy persons. The majority showed no perceptible difference in the position of the apex-beat and in the percussion sound in different postures of the body. There was slight lateral mobility to the left on assuming a left-sided position in 60 per cent. of the cases, and the apex-beat moved from 1.5 to 2 cm. He described seven cases of movable heart, in which the apex-beat was displaced 4 to 6 cm. to the left.

Hoffman[4] found that the various grades of mobility of the heart were easily recognized by means of *x*-rays, and concluded that marked movability is of considerable importance to the state of health.

Schmidt[5] concluded that movable heart is often associated with cardiac neurasthenia.

Leusser[6] described several cases of movable heart and considered a displacement of the apex-beat of 3 cm. or more, to the left in the left lateral position, as abnormal.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Cherchevsky: La mobilité du coeur et sa valeur diagnostique, Gaz. méd. de Paris, 1887, p. 629.
2. Rumpf: Ueber Wanderherz, Verhand. d. 7 Cong. f. inn. Med., 1888, p. 221.
3. Pick, A.: Ueber das bewegliche Herz (cor mobile), Wien klin. Wchnschr., 1889, p. 747.
4. Hoffman: Verhandl. d. 16 Cong. f. inn. Med., 1898, p. 216.
5. Schmidt: Deutsch. med. Wchnschr., 1901, No. 16, p. 242.
6. Leusser: Ueber Wanderherz, München. med. Wchnschr., 1902, No. 26, p. 1095.

Rummo,[7] in addition to increased mobility of the heart, described a condition in which there was sagging of the heart from its normal position over the diaphragm, due to relaxation of its supports, and introduced the term to such cases as "cardioptosis." There was no necessary relationship between cardioptosis and enteroptosis. He found both a partial and a complete ptosis, where the heart rests entirely on the diaphragm.

Braun[8] maintains that cardioptosis should be differentiated from movable heart. He does not consider the latter a disease, nor does he think there is justification for attributing neurasthenic heart symptoms to increased mobility of the heart.

Einhorn[9] found cardioptosis in 2.4 per cent. of 926 cases, eighteen men and four women. In the cases of cardioptosis he found it associated with increased mobility of the heart in a number of cases. He regards nervous disturbance of the heart, palpitation, vertigo, and occasionally inability to lie on the left side, as due to cardioptosis. In his opinion, cardioptosis is a distinct clinical entity, equally with enteroptosis.

Hunter[10] described a case of paroxysmal tachycardia and arhythmia with an unduly movable heart. The movability of the heart amounted to 2 inches with change of position from one lateral posture to the other. He was unable to determine that change of posture influenced the paroxysms of tachycardia.

Elliott[11] recently studied the movability of the heart and aorta in health, as evidenced by radiographs taken in unusual positions. That the heart is fairly movable in health and that it may be forced into unusual positions by abnormal physical means is generally understood, but that it is as freely movable as it is, and that its mobility may be made to assist in the interpretation, or may lead to misinterpretation of radiographic findings, unless taken into consideration, has not been sufficiently recognized. A radiograph taken with the patient lying on the right side, respirations at rest, shows that the heart is largely moved to the right of the vertebral column. Similarly, with the patient lying on the left side, respirations at rest, the entire heart shadow is carried to the left, leaving the right border of the vertebral column free and unaffected by the heart-shadow. With the patient lying on the right side, the aorta casts a shadow which extends 4 cm. to the right of the vertebral column, whereas with the patient lying on the left side, the shadow cast by the aorta does not appear to the right of the vertebral edge at all.

Krehl[12] found that the position of the heart changes with that of the body and that the apex-beat is often found to be displaced to the left a few centimeters when the individual lies on the left side. In some cases, however, displacement was so great that the term "wandering heart" was justifiable. In the right lateral position, the apex-beat in healthy individuals either remains unaffected or is displaced only by very little to the right. The change from the horizontal to the vertical position, and vice versa, has no appreciable effect on the apex-beat. Krehl considers that extreme mobility of the heart is due to great loss of intrathoracic fat (starvation cures, tuberculosis) and that in these cases the cardiac displacement causes more or less distress when the patient lies on his side, possibly on account of contraction or kinking of the large vessels.

Determann[13] considered that in nervous persons abnormal mobility of the heart appears to be not uncommon and causes subjective cardiac symptoms. A comparison with movable kidney naturally suggested itself.

Hoffman[14] states that when the position of the diaphragm is high and the heart is abnormally movable so that the larger portion of its area comes in contact with the chest-wall, dilatation may be simulated. He believes that many cases of so-called cardiac dilatation are in reality only examples of this condition. Error can be avoided by testing the mobility of this organ.

Dietlen[15] and Moritz[16] have made extensive orthodiagraphic studies of the size and position of the heart under normal and pathologic conditions. Conner,[17] recently summarizing some of their many interesting facts on this subject, states: 1. With a change from the recumbent to the erect position, there is a distinct sinking of the heart from 2 to 4 cm., corresponding to the lower position of the diaphragm and liver, and that with this the heart assumes a more nearly vertical position while the width of the shadow is considerably lessened. 2. In old age there is regularly a lower level of the diaphragm and a correspondingly lower position of the heart, but in this case the organ, instead of having a more vertical position than usually occupied, was more nearly transverse. The explanation of this is probably to be found in the relaxation of the attachments of the great vessels, by which the heart is held in position. 3. In women the position of the heart is on the average an intercostal space higher than in men. 4. In asthma and emphysema there is a marked sinking of the diaphragm and heart, and to this fact often, more than to the overlapping of the heart by the voluminous lungs, is to be ascribed the great diminution of the heart sounds in the second intercostal space and the low position of cardiac dulness.

The present contribution to this subject is the result of a study of 193 cases. Of this number, forty-nine were apparently healthy. The remaining 144 were private patients or routine cases studied in my wards at the Los Angeles County Hospital.

In studying the movability of the heart in different positions of the patient, the absolute or superficial cardiac dulness was used and determined by feeble percussion. In determining the change of the apex-beat in different postures, the usual point of maximum intensity of the apex-beat was ignored. That point of the heart coming in contact with the palpating finger farthest downward and to the left was considered the true apex.

The conclusions obtained were the result of a second examination, or were controlled by two examiners, so that a fair degree of accuracy may be assumed. In all cases in which there was doubt as to the exact position of the apex-beat or of the border of cardiac dulness, opinion was suspended and these do not enter into the ultimate findings.

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11. Elliott: Movability of the Heart and Aorta in Health as Evidenced by Radiograph Taken in Unusual Positions, Quart. Bull. Northwestern University Med. School, 1911, xii.
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13. Determann: Ueber die Beweglichkeit des Herzens, Deutsch. med. Wchnschr., 1900, No. 15.
14. Hoffman, A.: Acute Herzdilatation und Cor mobile, Deutsch. med. Wchnschr., 1900, No. 19.
15. Dietlen: Arch. f. klin. Med., No. 88, p. 55.
16. Moritz: Methoden der Herzuntersuchung, Deutsch. Klin., iv, pt. 2, No. 15.
17. Conner: The Clinical Study of Heart Cases, Am. Jour. Med. Sc., June, 1908, p. 790.

One of the most striking facts observed was the discrepancy between the amount of displacement of the apex-beat and that of the cardiac dulness in the change of position of the patient. The change in the apex-beat amounted in some cases to 5 cm. or 6 cm., while that of the cardiac border of dulness was only 2 cm. or 3 cm., and vice versa, so that, as far as our experience teaches us, these two factors are not always as constant as one might expect them to be. This may be due to the fact that in changing the position of the body there occurs a twisting of the heart on its long axis, thus making considerable alteration in that portion of the heart which comes in contact with the chest-wall as the apex-beat.

In the 193 cases there were nine in which there was total displacement of the heart downward, the so-called cardioptosis of Rummo. In seven of these there were clinical signs of atheroma of the aorta. The low position of the apex in these cases on first impression suggested aortic valve disease until the cardioptosis was discovered, which to me emphasizes the importance of invariably testing the mobility and position of the heart before assuming from an abnormal position of the apex-beat that dilatation or hypertrophy is present. Close examination in all of these cases of cardioptosis showed that the heart *en masse* was displaced downward from one to two interspaces.

Of the forty-nine persons in health, consisting largely of high school students, the average displacement of the apex-beat from the dorsal position to the left lateral position was 3.02 cm. to the left, while the right border of cardiac dulness changed only 1.04 cm. The greatest change in the apex-beat was 5 cm. and that of cardiac dulness 8 cm.

The smallest change in the position of the apex-beat was 2 cm. and that of cardiac dulness was in patient M. K., aged 15, apparently well, in whom there was no change in the movability of the heart from the dorsal to the left lateral.

Of the 144 patients selected routinely, suffering from various diseases, the average change in the apex-beat with the patient changing from the right lateral to the left lateral position, was 3.9 cm., the change in cardiac dulness, 2.7 cm. The maximum displacement of the apex-beat was 14 cm. in a case of pulmonary tuberculosis. In another tuberculous subject the displacement amounted to 10.5 cm.; in another, 13.5 cm. In one case of mitral regurgitation the displacement of the apex amounted to 9 cm., in another to 7.5 cm., and in still another to 8.5 cm. In other patients with the same diagnosis, however, the mobility of the apex was normal or diminished, so that the movability of the heart in these conditions was by no means characteristic. The greatest mobility of the cardiac dulness was 12.8 cm., in a case of pulmonary tuberculosis. In a second case of tuberculosis it was 12 cm. In the cases of cardiac lesions, twenty-five in number, excluding six cases of pericarditis with adhesions, the displacement of the apex-beat was 3.6 cm., and the change in the cardiac dulness with change in position of the patient from the right lateral to the left lateral was 3.3 cm. No differences in the displacement of the heart were observed in mitral and in aortic valvular lesions. In the six cases clinically diagnosed as pericarditis, two being confirmed at autopsy, with adhesion of the outer pericardium to surrounding structures, there was fixation of the heart; no change in either the position of the apex-beat or cardiac dulness occurred when the patient changed from the right to the left lateral postures.

The impressions from this study, imperfect as it is, are, first, that the determination of the movability of the heart is of considerable value in the differential diagnosis of cardiac dilatation, and that before assuming that the heart is dilated to the right or to the left, the movability of the heart should always be determined.

Secondly, the immobility or fixation of the heart should always arouse the suspicion of adhesion of the pericardium to neighboring organs. There is probably no serious heart lesion diagnosticated less frequently, clinically, than pericarditis with adhesions. Since systolic retraction of the interspaces and other signs of this condition are so frequently absent, it seems that it would be well to emphasize immobility or fixation of the heart as one of the signs of pericardial adhesions.

My thanks are due Drs. J. W. Nevius and J. W. Bardill for assistance in the production of this paper.

In addition to the authorities already cited, the following may be consulted:

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Groedel: Roentgen Rays in Heart Diagnosis, Interst. Med. Jour., June, 1911, p. 615.
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THE BACTERIOLOGY OF THE EAR*

JESSIE B. HUDSON, M.D.
IOWA CITY, IA.

Determining the variety of bacteria present in disease of the ear is an aid to prognosis and warns us of possible complications. Single infections are usually acute, while mixed infections are apt to become chronic. There are very few cases of sinus thrombosis reported as due to pneumococci, but streptococcus sinus thrombosis is of common occurrence. Streptococci also frequently cause brain abscess and may involve important structures by necrosis, or may cause a fatal septicema. Hence, it is important to know whether these organisms are present. Streptococci and pneumococci appear to be the most frequent cause of otitis and mastoiditis. Staphylococci are found in a large percentage of chronic cases, seldom in pure culture.

Most investigators do not consider infection with staphylococci likely to be serious, but operation is necessary in about half the cases of infection with *Streptococcus pyogenes* or *Streptococcus mucosus*. If meningococci are found we know the patient has, or is likely to have, meningitis.

Examination of ear discharges is important in cases infected with diphtheria bacilli in order that proper precautions may be taken to prevent the spread of the disease. Newsholme (1904) reports a case of infection with diphtheria from a case of otorrhea—a pure culture of diphtheria bacilli being obtained from the ear discharge. Graham-Smith (1904) reports five cases, infected with virulent Klebs-Loeffler bacilli from contact with a patient having otorrhea. Several others have obtained virulent diphtheria germs from the ear. Diphtheria-like bacilli are often found in ear cases; a small percentage of these are virulent. Nuttall and Graham-Smith found 10 per cent. virulent. It is necessary to make cultural tests and animal inoculations before making a positive diagnosis of diphtheria.

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In many reported cases, examination for bacteria was made only after puncture of the ear-drum. It is very difficult to sterilize the external auditory canal and drum-head so as to get uncontaminated cultures from the discharge. Leutert was the first to take cultures at the time of operation. He found streptococci predominating. In chronic cases staphylococci were most numerous. He thinks sinus thrombosis and brain abscess caused almost exclusively by streptococci. Newman and Rutten, in an article on "Etiology of Acute Otitis Media," come to practically the same conclusions. Libman found streptococci predominating. Barnhill and Wales report two-thirds of complications due to streptococci. McKenna says that *Streptococcus mucosus* is frequently found in otitis media, which explains its relative frequency as a cause of acute meningitis. Richardson mentions it as a cause of mastoid disease. Bacon thinks that most cases of acute otitis media are due to the influenza bacillus.

Infection may reach the middle ear through a ruptured drum-head, through the petrosquamosal fissure in the infant, through defects in the tegmen covered over with fibrous tissue, or in fracture of the temporal bone. It may travel along the nerve sheaths or blood-vessels, or the blood may carry infection to the ear. These cases, however, are rare. Microorganisms most frequently reach the ear from the nose and throat through the Eustachian tube. The chief predisposing factor is an inflammation of the nasopharynx or nasopharyngeal obstruction. Acute infection in the middle ear, with inefficient drainage or lack of proper treatment, is one of the most frequent causes of mastoiditis. A lowered vitality, exposure to wet and cold, and also certain constitutional diseases act as predisposing factors.

The question as to whether bacteria are present in the normal mastoid antrum is an important one. If they are present, then some relatively unimportant predisposing cause, as exposure to wet and cold, or loss of vitality from general or local causes, will give these bacteria an opportunity to develop and cause pathologic changes and loss of function, to a greater or less extent, and possibly serious complications.

Many investigators claim that the normal tympanic cavity and mastoid antrum contain pathogenic germs, few in number, which become active under favorable conditions. Others are just as positive that no pathogenic germs are present. The tympanum communicates with the Eustachian tube in front and with the mastoid antrum and cells behind. Since the Eustachian tube admits air to the middle ear, there seems to be no reason why it should not also admit bacteria from the throat.

A number of cases have been reported in which the mastoid was primarily involved. Two to 4 per cent. of typhoid patients have ear complications, the mastoid often being involved. Various organisms are found—staphylococci, streptococci, diplococci, colon bacilli, etc., thus apparently showing that a lowered vitality is the predisposing factor and that bacteria are already present.

In the following twenty-one cases, I have collected the material at the time of operation, made cultures and isolated and identified the bacteria. The material for examination was collected in sterile Petri dishes, and was then transferred to flasks containing 100 c.c. of sterile broth; an agar culture was also made by pouring agar on the material remaining in the Petri dish. These were incubated for twenty-four hours at 37 C, and then agar and gelatin plates were made. The plates were incubated from twenty-four to forty-eight hours. The colonies were then examined—methylene-blue and Gram stains being made, also hanging drops to determine motility, after which cultures were made from the different colonies on the various sugar media, on gelatin, blood-serum, milk, litmus milk, potato, and glucose and lactose bouillon. Where necessary, smears were stained for spores, capsules and flagella.

REPORT OF CASES

Following are given the synopses of twenty-one cases as taken from the history sheets:

CASE 1.—N. G., aged 19. September 29, complains of a discharge from the left ear, a roaring sound in the ear, and constant headache. Trouble started four years ago and has gradually become worse. Complains of a slight sore throat. At first, ear discharged only when lying on left side. No pain at that time. Complains of pain only when she catches cold in ear. Discharge night and day. Cannot hear very well with left ear. Whooping-cough when 2 years old and measles at 12. Perfectly well at present except for ear trouble. In left ear bone, conduction is better than air.

Diagnosis.—Chronic discharge from left ear, chronic mastoiditis left.

Operation.—October 1, radical mastoid—left.

Bacteriology.—Staphylococci and an unknown bacillus in left tympanic cavity. Streptococci found in left ear, December 6.

November 19, double suturing of left mastoid wound. Discharged February 9.

October 5, ear began discharging last Thursday and has been discharging ever since. March 8, left ear has been discharging for last two weeks. Sense of fulness in left side of head. Dull ache back of left ear.

Result.—Complete recovery. No improvement in hearing in left ear.

CASE 2.—E. T., aged 13. November 3, complains of earache in left ear. Ear has discharged for many years. Some impairment of hearing. Aches only in winter. Trouble starts as soon as cold weather sets in. Discharge and ear-ache whenever patient catches cold. Past history not known, patient being an adopted child.

Examination.—Bone and air conduction equal in left. Drum-head badly scarred.

Diagnosis.—Adenoids and diseased tonsils, chronic otorrhea—left.

Operation.—November 5, left radical mastoid with dura exposed.

Bacteriology.—Streptococci, *Staphylococcus aureus* and *albus.*

Plastic Operation.—November 19.

An autogenous vaccine was prepared and given every seven days in the following doses:

FIRST—	
Streptococci	5,000,000
Staph. alb.	100,000,000
Staph. aureus	100,000,000
SECOND—	
Streptococci	10,000,000
Staph. alb.	200,000,000
Staph. aureus	200,000,000
THIRD—	
Streptococci	15,000,000
Staph. alb.	400,000,000
Staph. aureus	400,000,000
FOURTH—	
Streptococci	20,000,000
Staph. alb.	600,000,000
Staph. aureus	600,000,000
FIFTH—	
Strept.	30,000,000
Staph. alb.	80,000,000
Staph. aureus	800,000,000
SIXTH—Same as Fifth.	

Result.—Complete recovery; patient gained in weight, and health much improved.

CASE 3.—H., schoolboy.

Diagnosis.—July 17, serous catarrh middle ear.

Operation.—Simple mastoid—left.

Bacteriology.—Staphylococci.

Operation.—August 4, adenoids and tonsils removed.

Result.—Complete recovery.

CASE 4.—R. B., aged 2.

Diagnosis.—February 23, acute mastoiditis, both sides.

Operation.—February 25, right simple mastoid.

Bacteriology.—Streptococci. March 6, diphtheria bacilli found in culture from right ear. The diphtheria bacilli were tested and found to be virulent.

Operations.—March 8, left simple mastoid. Sutured right. April 1, sutured left mastoid.

Discharged May 14.

CASE 5.—S. C., aged 22. April 24, complains of a growth on right mastoid. Commenced eight years ago. At times, patient says, it seems to puff up and then go down again. There has been no pain and no discharge. Never dizzy that she can remember. At times the growth is somewhat painful when pressure is made.

Diagnosis.—Mastoiditis.

Operation.—April 24, simple mastoid.

Pathology.—Enlarged glands over mastoid region, tip of mastoid somewhat diseased. Antrum normal. Laboratory report: One of the glands was sectioned and found to be lymphoid tissue, somewhat inflamed. Culture from the antrum showed numerous bacteria, including *Staphylococcus albus.*

Result.—Complete recovery.

CASE 6.—N. N., complains of loss of hearing and discharging ear. About two years ago noticed hearing was affected. The discharge began about six months ago.

Operation.—May 20, radical mastoid—right.

Pathology.—Dura exposed over tympanic cavity. Extensive necrosis along posterior wall.

Bacteriology.—Gram-negative streptococci, *Staphylococcus albus.*

Operation.—June 4, sutured right mastoid.

Result.—Complete recovery, hearing normal.

CASE 7.—F. A., aged 8. September 29. Ear trouble began two years ago. Had scarlet fever with diphtheria following. Had tonsils removed when he had diphtheria. Left ear began to discharge then and has been discharging nearly all the time since. Some better the past year. Had ear-ache at times before discharge began. Had to cleanse ear three or four times a day. Odor offensive. Mastoid region painful once in a while. Right ear discharged for a short time after attack. Hearing bad in left ear.

Examination.—Right ear normal. Left ear, high notes normal. Bone conduction better than air. Whisper, one foot; speaking voice, four feet. Perforation of drum-head, discharge from ear.

Diagnosis.—Chronic otorrhea.

Operation.—September 3, radical mastoid.

Pathology.—Necrotic bone removed from middle fossa exposing dura. Attic filled with granulations. Removed hammer. Found many cells about external auditory canal. Necrotic material next dura and pachymeningitis. Surface of dura inflamed, dura not bulging.

Bacteriology.—*Sarcina aurantiacea* and rhodococcus.

Result.—Complete recovery, no improvement in hearing in left ear.

CASE 8.—L. D., aged 17. October. Trouble began in right ear about a year ago, caused by a bad cold. Had severe pain in ear and mastoid tenderness for about a week. Could not hear well with that ear. There was a discharge for a few days at first. Has not discharged since then but has had much pain in ear and back of ear. For the last month pain has been constantly present.

Examination.—Right ear, high notes normal. Air conduction better than bone. Small hemorrhages on lower half of drum-head. Whisper, 15 feet; speaking voice, 40 feet. Caloric test showed labyrinth functionating. Left ear normal.

Operation.—October 7, simple mastoid—right.

Pathology.—Necrosis below antrum and over angle of lateral sinus. All cells inflamed.

Bacteriology.—Sarcina was the only organism found. Patient completely recovered.

CASE 9.—Patient, aged 26. October 29 had had trouble with right ear for thirteen years, since scarlet fever. For the last three months it has been discharging constantly—pain at times.

Examination.—Perforation in drum-head. Right tube open. Ear might get well with packing and inflation. Right ear, whisper 4 inches; speaking voice 20 inches. Left ear, whisper 15 feet; speaking voice, 35 feet.

November 28. Needs radical mastoid.

Operation.—December 1, right radical mastoid.

Pathology.—Exposed lateral sinus at knee; sinus was thickened and covered with granulations. Necrosis down to facial canal; necrosis above and posteriorly. Polyps in tympanic cavity. Facial nerve unaffected after operation.

Bacteriology.—*Staphylococcus aureus.*

Result.—Complete recovery from operation; no improvement in hearing.

CASE 10.—G. R., aged 10. November 9. Complains of ear trouble. Had tonsillitis four weeks ago, and after a few days his left ear began to discharge. Had ear-ache in left ear during his attack of tonsillitis and just before the ear began to discharge. The discharge stopped last Saturday, when he noticed a swelling behind his ear. Says it is not sore unless he presses it. Hearing somewhat impaired. Does not breathe through his nose at night and only a part of the time during the day. Had measles when 8 years old. Past medical history otherwise negative.

Diagnosis.—Acute mastoiditis.

Operation.—November 11, left simple mastoid. Adenoids removed.

Pathology.—Open sinus leading into antrum. Much pus present. Dura not exposed. Parasinus abscess and external dural abscess. Lateral sinus exposed full length.

Result.—Complete recovery.

Bacteriology.—Streptococci.

CASE 11.—H. J., aged 16. November 18. Hurt in a runaway in March. Unconscious three or four hours. Has had trouble back of ear and in back of head since. Both ears discharged some at times since then. Has had paracentesis of left ear-drum once, and of right, three or four times. This relieves pain for a time. Pain begins in back of head and head throbs. Tenderness over right mastoid extending back almost to occipital protuberance since accident. Had vomiting spell just after accident but none since. Headache all the time.

Examination.—Right and left ears normal.

Diagnosis.—Traumatic mastoiditis or periostitis and osteitis.

Operation.—November 2, right simple mastoid. Removal of necrotic bone posterior to mastoid region, exposing lateral sinus and dura.

Pathology.—Circular area of necrotic bone below lateral sinus three and one-half inches posterior to external auditory canal. Extended to dura. Periosteum black over this area. Periosteum peels off with difficulty. Mastoid antrum and cells normal. Posterior emissary vein one inch posterior to mastoid. Lateral sinus exposed. Dura exposed in right occipital region and appears normal.

Bacteriology.—*Staphylococcus albus* and *aureus* and an unknown bacillus found in mastoid antrum.

December 17, ear began to pain and drum was bulging. Paracentesis done. Found only serum. *Staphylococcus albus* found in discharge. January 12. Paracentesis right drum. February 16, discharged—perfectly well.

CASE 12.—R. F., schoolboy. November 1. Says his ears have discharged ever since he can remember. No other history obtainable.

Examination.—Right ear, yellowish discharge. Perforated drum-head. High notes normal. Bone conduction better than air. Whisper 3 feet; speaking voice 10 feet. Tests show labyrinth functionating. Left ear—yellowish discharge. Perforated drum-head. High notes normal. Bone conduction better than air. Whisper, 15 feet; speaking voice, 30 feet. Tests show labyrinth functionating.

Diagnosis.—Double chronic otorrhea.

Operations.—November 4, right antromeatal. Adenoids removed. November 11, left radical mastoid. November 18, plastic operation.

Pathology.—All mastoid cells necrotic. Lateral sinus not exposed. Pus in attic. Exposed dura. Pachymeningitis.

Bacteriology.—Pneumobacillus.

Pathology.—Tip necrotic. Necrosis anterior and external to facial—very extensive. Much necrosis at opening of Eustachian tube. One arm of incus gone. Malleus in fair shape. Cerebellum exposed just under lateral sinus.

Bacteriology.—Pneumobacillus.

January 2, left ear well; right improving. No improvement in hearing in left; about two-thirds normal in right.

CASE 13.—L. C., aged 17. November 26. Left ear discharged when a baby. No discharge after that for six or seven years. Since then, whenever he catches cold the ear discharges. Discharge yellowish, has bad odor. No pain in ear. No pain or swelling over mastoid region. Thinks he cannot hear with this ear.

Examination.—Right ear, air conduction better than bone. High notes cut down. Whisper, 15 feet; speaking voice, 40 feet. Left ear, high notes cut down. Bone conduction better than air. Whisper, 6 inches; speaking voice, 25 feet. Tests showed labyrinth functioning. Perforation of drum the size of pea.

Diagnosis.—Chronic otorrhea.

Operation.—December 2, left radical mastoid.

Pathology.—Complete necrosis of mastoid. Posterior fossa exposed. Exposed dura. Shiny material in antrum.

Bacteriology.—*Staphylococcus aureus* and *Micrococcus tetragenus.*

Patient developed slight facial paralysis December 4, which lasted until December 13. Went home before ear was well. Not known whether he had further trouble.

CASE 14.—W. W., aged 17. November 5. Had tonsils removed ten years ago. Two years ago adenoids removed. Since that operation, ears have been discharging almost constantly. Turbinates large and fibrous. Remains of tonsils infected. Left, voice, 8 inches; right, whisper, 10 feet. Advised to have nose repaired first, and at same time have ear treated twice a day. Later, if necessary, mastoid operation.

October 7, acute tonsillitis. October 19, left inferior turbinate trimmed. Has a very high arch with an overhanging bite. Arch should be widened. November 16, right inferior turbinate trimmed. November 26, paracentesis left drum-head.

Operation.—December 19, left meatomastoid. Dura exposed in middle fossa; lateral sinus exposed and whole mastoid necrotic.

Bacteriology.—Colon bacillus and *Bacillus diphtheriæ.*

Result.—Patient well, no further trouble with ear, hearing about one-fourth of normal.

CASE 15.—E. G., aged 16, December 13, complains of discharging ears. Puffing noise constantly in right ear. Says hearing is impaired in right ear. Normal in left. When a baby, had discharge from both ears; does not remember how long it lasted. Seven years ago one discharged, does not remember which one or how long it lasted. Last April he had mumps on both sides and two weeks later measles. Ears both began to discharge when the patient had mumps. Left one discharged for two months, right one ever since—occasionally stopping for a day or two at a time. Some pain below right ear and in front of mastoid. No pain or swelling behind ear. Discharge was of a yellowish color, profuse and had an offensive odor. Has been treated for past three months.

Physical Examination.—Pus in external meatus. Drum-head thickened. High notes normal Air conduction better than bone. Whisper, 2 feet; speaking voice, 12 feet. Test showed labyrinth functionating. Adenoids present. Punctured right and left nasal antrum and found a small amount of old pus in left.

Diagnosis.—Mastoiditis, right.

Operation.—December 16, right simple mastoid, also adenoids removed.

Pathology.—Eburnated bone in cortex. Antrum and neighboring cells filled with pus.

Bacteriology—Pneumobacillus.

December 30, taken to isolation ward for erysipelas beginning about 1 inch anterior to right ear. Began December 28. January 2, had a little tenderness over tip of left mastoid. January 3, swelling on left side of neck just below mastoid.

Operation.—January 12, paracentesis—right. Discharged. March 1, comes back because her right ear is discharging—started two weeks ago. Discharged April 7. Ears well, hearing about one-half normal in right ear.

CASE 16.—A. P., aged 16. December 15. Was slow in learning to talk. At times hears fairly well. When he takes cold, hearing is affected. To-day hears loud voice at 6 inches only. Sleeps with mouth open.

Examination.—Left drum-head scarred and retracted. Right external canal filled with pus. Right ear, loud voice, 6 inches; lef tear, cannot hear speaking voice. Tonsils and adenoids should be removed. Needs a meatomastoid operation.

Operation.—December 16, radical mastoid.

Bacteriology.—Colon bacillus.

Operation.—December 28, adenoids removed.

Result.—Complete recovery from operation; hearing in right ear about one-half normal.

CASE 17.—E. V., aged 15, January 7. Ear trouble began one week ago last Monday. Left ear began to ache, continued to ache for a couple of days, and then began to discharge. Has been discharging ever since and is painful most of the time. Mastoid region swollen after ear began to discharge. Had influenza and sore throat about one week before ear trouble began. Says she had ear-ache a great deal about eight years ago; does not remember which ear or whether it discharged any. Breathes through mouth day and night. When she catches cold has a dull pain over right antrum. Had ulcerated tooth on right side above one or two years ago. Nose constantly discharges—yellowish—no odor.

Physical Examination.—Right ear normal. Left ear, perforation of drum-head with discharge of pus. Drum-head bulging. Tenderness over mastoid. Pain in ear most of the time. High notes normal. Bone conduction better than air.

Diagnosis.—Left otorrhea and mastoiditis.

Operations.—January 7, paracentesis left ear-drum. January 13, left simple mastoid.

Pathology.—Mastoid cells small and all filled with pus. Not much necrosis. Exposed lateral sinus at knee.

Bacteriology.—Streptococci, some of them Gram-negative. *Micrococcus catarrhalis.* Hay bacillus.

Discharged February 15. Ears normal.

CASE 18.—M. G., aged 16. January 16. Has had trouble in right ear as long as she can remember. If she catches cold, she has ear-ache. Three or four years ago had ear-ache in right ear a great deal. One year ago, right ear discharged for two or three weeks. Discharge was purulent. Since then no discharge until middle of December, when she had measles. December 26, had a severe ear-ache; discharge began and has continued ever since, stopping at times for a day or two. Ear has been very painful; was swollen over mastoid region a part of the time. Ear and mastoid region have been massaged by an osteopath. Says she had tonsillitis several years ago, also on left side, when she had measles. Has had sore throat occasionally and could open her mouth only one-half inch.

Physical Examination.—Tenderness over mastoid. Pulsating ear-drum. Abscess under temporal muscle. High notes normal. Bone conduction better than air conduction.

Diagnosis.—Mastoiditis—right. Probably abscess under temporal muscle.

Operation.—January 20, right simple mastoid. Paracentesis right ear-drum.

Pathology.—Abscess in temporal muscle. Pus in mastoid antrum. Exposed lateral sinus. Badly necrosed bone extending to dura. Has pachymeningitis and perisinus abscess, with inflammation of walls of sinus. Dead bone lying next to brain and attached to dura. Bone between temporosphenoidal lobe and sinus all rotten. Granulations on lateral sinus. No evidence of leptomeningitis or local brain abscess. Dura not tense.

Bacteriology.—Staphylococci and Gram-negative streptococci.

February 10, sutured right mastoid. February 26, patient came back for examination; was to come twice a week for treatment. April 4, discharged—ear well.

May 11. Has come back for treatment of other ear. Hearing improved.

CASE 19.—L. R., aged 19. January 26. Right ear began aching January 25. Discharge began January 26; purulent and bloody. Soreness over mastoid; left ear aching some at present.

Operation.—February 23, simple mastoid, right. Results good.

Pathology.—All mastoid cells necrotic; dura not exposed.

Bacteriology.—*Streptococcus* and *Staphylococcus albus.*

Results.—May 13. Discharged, complete recovery.

CASE 20.—Mrs. L., aged 41. February 1. Sunday morning had an ear-ache. Right ear pains; has roaring in ears; hears water running, katydids, etc.

Examination.—Left drum-head retracted; pain on pressure over tip of right mastoid. Right ear, loud voice 4 feet; left, whisper 3 feet.

Diagnosis.—Right ear, abscess with mastoid involvement. Had ulcerated upper molar on right side. Just above second molar on right side is a discharging sinus. Has had discharge from nose before. Exploratory puncture of right antrum; lots of pus.

Diagnosis.—Empyema of antrum of Highmore secondary to necrotic tooth.

Operation.—February 3, right simple mastoid. Infected with gas-producing organism; gas bubbled up when antrum was approached and also when ear-drum was cut. Pain in antrum.

Bacteriology.—*Streptococci, Micrococcus aerogenes capsulatus* and *B. subtilis.*

Operation.—Right radical antrum, middle and third molars removed. With the third there came away a part of the alveolar process, which was necrotic, and left an opening into the antrum. Antrum was filled with polyps.

March 24, canal has been dry for several days.

May 2, mastoid and antrum well. Return for closure of opening between antrum and mouth. Result normal.

CASE 21.—M. G. March 3. Last Wednesday had a sore throat and right ear started to ache, is still aching. Has a sense of fullness in right side of head. Mastoid region very tender. Glands at angle of jaw very painful. Six weeks previously had appendicitis and was operated on. A few days later temperature rose to 105 F., and examination showed an abscess at site of operation. Bacteriologic examination of the pus showed streptococci. She recovered from this and was about to be discharged from the hospital when the ear trouble began.

Ear discharged when she was a very small child. Also discharged last year. Tonsils become inflamed whenever she catches cold. Are inflamed now. Cannot see very well; wears glasses. Has headache, photophobia; eyes water a great deal.

Left ear normal. Right ear, drum head bulging and a little red. Slight tenderness at mastoid tip. Bone conduction better than air conduction. High notes normal; whisper, 10 inches; speaking voice, 6 feet.

Operations.—March 3, paracentesis, right ear. March 10, right simple mastoid.

Pathology.—Necrosis of antrum; dura over middle fossa and lateral sinus exposed. Granulations over middle fossa on dura.

Bacteriology.—Gram-negative streptococci.

This case is particularly interesting from the fact that the ear infection followed so soon after the appendicular abscess and was caused by the same organism. The infection was evidently carried by the blood. Recovery complete.

In two of these cases the mastoid antrum was normal and pathogenic bacteria were found. In one other case not included in this series, I found pathogenic bacteria in the normal antrum.

There were thirteen chronic cases and six acute cases. In seven chronic cases, staphylococci were found. In only two cases were they the only organism found. In three of the chronic cases streptococci were present, but not in pure culture. In two chronic cases pneumobacilli were found in pure culture. Colon bacilli were found in two chronic cases, once in pure culture, once with *Bacillus diphtheriæ.*

Diphtheria bacilli occurred as a secondary infection in one acute case. In the six acute cases streptococci were found, three times in pure culture. In one acute case Gram-negative streptococci were the only germs found. Staphylococci were found in one acute case—not in pure culture. *Micrococcus aerogenes capsulatus, Micrococcus catarrhalis* and *B. subtilis* were found in mixed infections. In many cases no history was obtainable as to the cause of the disease. In two cases ear trouble followed scarlet fever; in one mumps and measles; in one influenza; in one tonsillitis; in one removal of adenoids; in one the disease followed empyema of the antrum of Highmore, secondary to a necrotic tooth. One was made worse by an attack of measles. Five cases were aggravated by taking cold. In most of the chronic cases and in one acute case, necrosis was extensive. It did not appear to be worse where streptococci were present.

SUMMARY AND CONCLUSIONS

1. Bacteria are normally present in the mastoid antrum. This is to be expected since there is a continuous passage from the throat through the Eustachian tube and middle ear to the antrum.

2. Mastoiditis is caused by a variety of organisms. Those found in my cases were *Staphylococcus, Streptococcus, Micrococcus catarrhalis,* diphtheria bacillus, *B. coli communis,* pneumobacillus, *B. aerogenes capsulatus, Micrococcus tetragenus,* sarcina, and *B. subtilis.*

3. In three cases of ear disease Gram-negative streptococci were found.

4. The few patients who were treated with vaccines after operation were remarkedly benefited.

I wish to thank Dr. Dean for the opportunity of studying these cases, also for the suggestions he has given me in my work, and for the use of his private library.

207 North Capitol Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

CALCIUM PHENOLSULPHONATE—Calcii phenolsulphonas—Calcium Sulphocarbolate.—Calcium 1,3-phenolsulphonate, $[C_6H_4(OH)SO_2]_2Ca{=}Ca(C_6H_5O_4S)_2$, is the neutral calcium salt of para-phenolsulphonic acid.

Calcium phenolsulphonate occurs as a white, or faintly pinkish-white, almost odorless powder, having an astringent, bitter taste. At high temperatures the salt chars, emits inflammable vapors having an odor of phenol, and finally leaves a residue of calcium sulphate.

The salt is easily soluble in water and in alcohol.

An aqueous solution of the salt (1-100) should assume a pale violet color on the addition of ferric chloride test solution.

If 5 Gm. of the salt be percolated with 25 Cc. of ether in a small filter, the solvent allowed to evaporate spontaneously and the residue, if any, dissolved in 5 Cc. of water, the solution should

not give a white precipitate upon the addition of a few drops of bromine test solution (absence of *phenol*).

An aqueous solution of the salt (1-100) should not respond to the time-limit test for *heavy metals* prescribed by the United States Pharmacopeia, Eighth Revision.

An aqueous solution of the salt (1-100) acidified with a few drops of diluted hydrochloric acid should give no immediate turbidity after addition of 1 Cc. of barium chloride test solution (limit of *sulphate*).

If dried to constant weight at 100° C. (212° F.), the salt should not lose more than 2 per cent. of its weight (absence of an undue amount of *water*).

If from 0.5 to 1 Gm. of the salt be dried to constant weight at 100° C. (212° F.) and the dried substance be slowly ignited in an uncovered crucible (care being taken that the contents be freely exposed to the air) until the weight becomes constant, the residue should amount to not less than 35.0 per cent. nor more than 36.0 per cent. of the weight of the dried substance.

Actions and Uses.—Calcium phenolsulphonate has the actions and uses of other phenolsulphonates (sulphocarbolates). It is believed by some to be an intestinal antiseptic, but most pharmacologists regard the antiseptic powers of the phenolsulphonates as feeble.

It may be prescribed in diarrhea and in diseased conditions in which it is believed that there is an undue amount of intestinal putrefaction.

Dosage.—The average dose is 0.5 Gm. (8 grains).

Non-Proprietary Preparations:

Calcium Phenolsulphonate, M. C. W.
Manufactured by the Mallinckrodt Chemical Works, St. Louis.
Calcium phenolsulphonate, Abbott.
Manufactured by the Abbott Alkaloidal Co., Chicago.

Therapeutics

PRESCRIPTION-WRITING

CHAPTER V.—DOSAGE

The dose of a drug should be based on the age, weight and individuality of the patient, and the necessity for a strong action of the drug.

The frequency of the dose is determined by the results obtained, by the length of time it takes the drug to be eliminated or cease its action, and the possibility of its causing a cumulative effect.

While age is an all-important element in the determination of the dose, the weight, unless in the obese, is the most important element, except in the case of narcotics given to children. Children have more central nervous system as compared to their weight than adults, and therefore are more profoundly affected by drugs which act on the brain, than are adults. In other words, a given dose of a narcotic, especially of the opium series, for an adult must be more reduced in size for a young child than any table of reduction computed by age or weight would determine.

The best simple rule of dosage by age is the following:

At 20 years, the adult dose.
At 10 years, ½ the age, ½ the dose.
At 5 years, ¼ the age, ¼ the dose.
At 2½ years, ⅛ the age, ⅛ the dose.
At 1 year, 1/12 the dose.

Children whose ages are between the ones here specified may readily be prescribed doses a little more or less than the dose determined by the age nearest theirs in the table.

The relation of size and weight to the dose is all-important. A large child of 2 years should certainly receive a larger dose than a weakly, small child of the same age. Also a small adult of 20 should receive less than a large muscular individual of the same age. The blood of an adult represents about one-thirteenth of his total weight. This is not true of children or of the obese. Hence the dose of an obese individual may be even less than if his weight were normal.

The following are the average weights for normal adult males. It should be remembered that females up to the age of 45 or 50 generally weigh less than males; also that a range of from 20 to 25 pounds above or below the average weight, the patient's general condition being good, is not necessarily considered a weight too high or too low for acceptance as an insurance risk. Above or below this range of 20 to 25 pounds from the average is generally considered over-weight and under-weight, and the acceptance of such an individual for insurance becomes questionable.

TABLE OF AVERAGE WEIGHT TO HEIGHT AT DIFFERENT AGES

	Year							
Ft. In.	15–24	25–29	30–34	35–39	40–44	45–49	50–54	55–60
5–0	120	125	128	131	133	134	134	134
5–1	122	126	129	131	134	136	136	136
5–2	124	128	131	135	136	138	138	138
5–3	127	131	134	136	139	141	141	141
5–4	131	135	138	140	143	144	145	145
5–5	134	138	141	143	146	147	149	149
5–6	138	142	145	147	150	151	153	153
5–7	142	147	150	152	155	156	158	158
5–8	146	151	154	157	160	161	163	163
5–9	150	155	159	162	165	166	167	168
5–10	154	159	164	167	170	171	172	173
5–11	159	164	169	173	175	177	177	178
6–0	165	170	175	179	180	183	182	183
6–1	170	177	181	185	186	189	188	189
6–2	176	184	188	192	194	196	194	194
6–3	181	190	195	200	203	204	201	198

In determining the dose it is most important to consider whether or not the patient has any exceptional susceptibility to the given drug. When an idiosyncrasy or abnormal susceptibility to a certain drug or to drugs of a certain class is known, the drugs causing it should, if possible, not be administered. That peculiar phenomenon, now known as anaphylaxis, is one which also should be taken into account in this connection.

Sometimes such undesired action of a drug occurs with the first dose only, notably in the case of quinin, and a tolerance to the drug is, after this first dose, temporarily acquired.

Another idiosyncrasy of a patient may represent a tolerance to a drug such that large doses must be given to produce any effect. This tolerance may be natural or acquired by previous use of the drug.

Still other very important predispositions of a patient are caused by the disease affecting him, by the condition of his digestive and absorptive system, and by the condition of his eliminative organs. The disease present may create a tolerance or an increased susceptibility to a drug. Slow absorptive powers may render the action of the drug almost impossible or allow accumulation of dangerous amounts of the drug (under which conditions the drug should be given hypodermatically, if it is needed). Slow or retarded elimination due to defective eliminative organs will allow cumulative action of many drugs.

The drugs which are most frequently found unexpectedly to cause undesirable or even serious symptoms in susceptible individuals are quinin, salicylates, atropin-containing drugs, iodin-containing drugs, and opium and its alkaloids.

The diseased conditions that most seriously modify (lessen) the dose of a drug are nephritis and cirrhosis of the liver.

A condition of shock precludes immediate absorption from the stomach, hence such a condition must be combated, if by drugs, hypodermatically.

Frequency of the Dose

It should be carefully learned how long, ordinarily, it takes a given dose of a drug to act, and how long before it is mostly eliminated. This determines the frequency of the dose. Also some drugs are eliminated so

slowly that they tend to accumulate in the system or are deposited in the various organs so that medication may occur by autolytic action some days and even weeks after the cessation of the administration of the drug.

A few of the rapidly acting drugs are:

Alcohol	Iodids
Ammonia	Salicylates
Camphor	Strophanthin
Caffein	Strychnin
Chloral	

These act in a few minutes to an hour or so, hence the intervals at which they may be given range from every hour to every three hours, or three times a day, according to the drug.

A few of the slowly acting drugs are:

Arsenic	Quinin
Atropin	Synthetic antipyretics
Bromids	Synthetic hypnotics
Digitalis	Thyroid
Mercury	

These act in from several hours to twenty, hence should be given once or twice a day, according to the drug.

A few of the drugs that tend to accumulate in the system are:

Arsenic	Digitalis
Atropin	Mercury
Bromids	Strychnin

Many drugs cause eruption on the skin either due to irritation of the stomach and duodenum or to their being more or less excreted by the skin and irritating the glands during such excretion, or they may cause flushing of the skin.

Examples of drugs causing the first kind of irritation are: copaiba, chloral, opium, quinin, salicylates, synthetic compounds, volatile oils; drugs of the second type are arsenic, bromids and iodids; those of the third type are antitoxin, atropin and thyroid.

It should always be remembered that some drugs are excreted into the milk; hence if the mother is nursing her baby, some drugs should be avoided, and some given only infrequently; or on the other hand, the baby may be medicated through the mother.

Generally speaking most narcotics (opium, bromids, etc.); most so-called alteratives (arsenic, mercury, iodids, thyroid); most cathartics; and quinin are excreted by the milk.

CHAPTER VI.—METHODS OF ADMINISTERING DRUGS

Drugs and serums are more than occasionally administered intravenously, but as the technic requires skill, most perfect asepsis, and should require the enforcement of at least twenty-four hours of absolute rest, this method is not likely to be frequently resorted to. Moreover it seems to be a fact that, when a drug or serum is injected intramuscularly, the rate of absorption and activity of a substance is almost as rapid as when it is given intravenously, and the danger of accidents is much less.

The hypodermatic or subcutaneous method is of very great value in all emergencies, but should not be used too frequently. Of course the most frequent need for such medication is caused by pain, which must be combated by morphin or its equivalent, and the danger of acquiring a habit is greater when the drug is used hypodermatically than when it is given in any other way.

Of course the most frequent method of giving a drug is by the mouth, either in liquid, powder, pill, capsule or tablet. A drug will surely act more quickly if given in liquid solution, and more quickly on an empty stomach. If it is disagreeable, however, it should be given in capsule if the character and dose of the drug will allow it. Also if a drug is irritant, it should not be given on an empty stomach. A disagreeable liquid drug should not be combined with a syrup, which does nothing but prolong the taste and upset the stomach, but should be given in plain water to be followed by any kind of taste the patient prefers, such as orange, lemon, or by a peppermint or wintergreen candy for example. Or the liquid may be given in a sour mixture as lemonade or syrup of citric acid and water, or it may be given in a mineral or carbonated water. A powder may be given in milk or in an effervescing water.

Capsules are the nicest means of giving drugs disagreeable in taste and small in dose. The contents of a capsule should be dry for rapid solution, the principal advantage of a capsule over a pill. If rapid action is desired, or if it is feared that the capsule, slowly dissolving on a small part of the mucous membrane of the stomach will irritate the membrane, the capsule may be uncapped at the moment of swallowing, and the result is the same in the stomach as though the drug had been taken in powder. Alcohol in any form in the stomach will retard the solution of a capsule. Pills are not so much used as before the capsule became so popular. The solution and absorption of a pill must be slow, unless it contains some particles of a substance that swells with water, as starch. Sugar, chocolate, or gelatin-coated pills and tablets make the solution still slower, though in the case of drugs to act on the intestine this may be of advantage.

The much-used tablet, compressed or triturate, doubtless renders much medication valueless, and perhaps, fortunately, harmless. The speed of solution of most tablets on the market is problematical, hence if the action of a tablet is immediately desired it should be predissolved, or at least crushed by the teeth before swallowing. All antipyretic coal-tar tablets should be crushed before swallowing and then a good drink of water taken with them. It should not be forgotten that anything that may bite or irritate the membrane of the mouth will do the same to the mucous membrane of the stomach. Hence bromid tablets should never be taken undissolved. Potassium chlorate tablets dissolved in the mouth or swallowed are dangerous. Potassium chlorate solutions for the mouth and throat are valuable, but there is no justification for ever taking potassium chlorate into the stomach or into the system.

A very soluble tablet dissolved and absorbed from the mouth will give almost as rapid action as when given hypodermatically.

The rectum absorbs drugs given by means of suppositories or injections nearly and sometimes quite as rapidly as does the stomach. But sedatives and some laxatives only are ever administered by suppositories for systemic effect.

A few drugs are given endermically, but except in the case of mercury the method is uncertain.

Mucous membranes may be treated by douching, injection, insufflation, and those of the air passages by inhalation. Some drugs are absorbed by all of these methods, and if poisonous drugs are used, the possibility of too great an absorption must always be kept in remembrance.

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[*For other information see second page following reading matter*]

SATURDAY, OCTOBER 21, 1911

THE ALLEGED HYGIENIC VALUE OF OZONE

We have already on several occasions discussed the use of ozone for the purification of drinking-water and have pointed out some of the reasons why under present conditions this is of limited application. There is no doubt that ozone is an effective sterilizing agent when added to water containing little organic matter, or that its use appeals to the popular prejudice in favor of a substance that leaves behind it no foreign chemical residue in the water treated. At present, however, the controlling factor in the installation of an ozonizing plant is its relative cost compared with other equally effective methods of water purification.

Attempts are now being made to extend the hygienic —and the commercial—uses of ozone still further. It must be admitted that in some directions at least these attempts are not justified by any evidence at hand. As a gaseous disinfectant of rooms and apartments ozone has never been widely employed, although a few experiments have seemed to indicate that it might be used for this purpose. It must be remembered that the ordinary method of production of ozone by electrical discharges at high tension rarely if ever yields a pure gas, but that the ozone is mixed with other gases, especially hydrogen peroxid and the oxids of nitrogen. Since these gases possess germicidal power and since the actual amount of ozone itself that is produced undoubtedly varies greatly with different machines and under different conditions and is not readily and accurately determinable, it is difficult to carry out conclusive experiments. Indeed, investigators generally recognize that some of the effects commonly attributed to ozone are due to the peroxids of nitrogen and hydrogen.

In view of this uncertainty regarding the more easily measurable effects of ozone it behooves us to look conservatively on the claims sometimes made for ozone as a substance which, inhaled in small quantities, is beneficial to health. The recorded evidence on which such a claim is based is extremely slender. Indeed, there is reason for believing that when the percentage of ozone in the air goes beyond a certain point, not only irritation of the respiratory tract is produced, but also other injurious effects. If the experiments of Schultz on chronic ozone poisoning are open to the objection that the effects observed were due to the nitrogen oxids mixed with the ozone rather than to the ozone itself, there is ground for reflection in the fact that such nitrogen compounds are always formed in greater or less abundance by the ordinary methods for producing ozone unless special care be taken to dry the air on which the ozonizer acts. In other words, untoward physiologic effects have been observed in animals treated with ozone and the mixture of gases with which ozone is practically always associated, and no physiologic benefit has been indubitably demonstrated.

Such facts justify hesitation in deciding on the installation of those forms of ozone-generating apparatus recommended for "purifying the air." There seems to be no doubt that disagreeable odors may be destroyed or neutralized by the gases formed by such machines, but one may be allowed to be skeptical as to the "sterilizing" of the air through their action. Certainly the benefits to health to be expected from the inhalation of varying and unknown quantities of ozone are purely conjectural. There is after all no more reason for accepting without investigation the statements of manufacturers about the hygienic properties of the machines they manufacture than for believing implicitly the assertions of nostrum-promoters.

THE PARATHYROIDS AND CALCIUM METABOLISM

It may be regarded as established beyond reasonable doubt that a relationship exists between tetany and removal of the parathyroid glands. MacCallum and Voegtlin[1] have suggested that this relationship may be due to the influence of the parathyroids on calcium metabolism. For they found that removal of the parathyroids was followed by increased calcium excretion with diminution of the calcium content of blood and brain, and that the tetany following extirpation of the glands could be avoided by the injection of calcium salts. This relationship between the parathyroids and calcium metabolism has recently received striking confirmation by Erdheim[2] and several co-workers, who have studied the effects of parathyroidectomy in white rats. In rodents the incisor teeth present the peculiarity of constant growth, resembling skeletal bone in this respect, so that they afford remarkable opportunities for the study of the details of calcium deposition. During a series of experiments on the relationship between parathyroid extirpation and tetany, Erdheim noticed that the incisor teeth of the rats became liable to repeated fracture, and a careful study of this phenomenon has led to several interesting observations. In the normal incisor tooth of the rat, the dentin forms the principal portion; a conical pulp cavity pierces this longitudinally, and a narrow zone of dentin adjoining this cavity is normally undergoing calcification, while the greater part has already received its complete deposit of calcium.

1. MacCallum and Voegtlin: Jour. Exper. Med., 1909, xi, 118.
2. Erdheim: Frankfurt. Ztsch. f. Path., 1911, vii, 178.

On removal of the parathyroids, it was found that calcification of the dentin at once ceased more or less completely; the portion already hardened underwent no change, but as the effects of use wore down this older part, the new uncalcified dentin taking its place lacked strength, and fractures followed. Imperfections in the enamel deposit also occurred, though at a later period than the alterations in the dentin. By regulating the time between extirpation of the glands and examination of the tooth, all transitional stages between the normal tooth and one almost completely decalcified could be obtained.

Still more interesting results followed the transplantation of the parathyroids. Owing to the great difficulty of getting successful growth of the transplanted organs in a second animal, the earlier work was limited to the transference of the glands from the neck to the abdominal wall. This was successfully accomplished in nine cases, and in each of these there was found in the incisor teeth a zone of uncalcified dentin, corresponding to the period of parathyroid quiescence, interposed between two layers of normal dentin. Transplantation of the gland from one animal to another in which the parathyroids had been previously extirpated was successful in only one instance. In this animal, some time before the examination of the teeth, the transplanted glands were also removed. Corresponding to the period of removal of the animal's own organs, there occurred a zone of uncalcified dentin. Another partially calcified zone indicated the period of activity of the transplanted glands, and a third zone, completely lacking in calcium salts, recorded that of the second removal.

In the face of such evidence, there can be little doubt of the influence of the parathyroids on calcium metabolism. Additional proof has been afforded in the case of skeletal bones by Erdheim and by Canal, who have both shown that under the influence of removal of the parathyroids callus formation is greatly retarded, owing almost entirely to deficient calcium deposition.

Erdheim does not hesitate to call attention to the similarity between his findings and those in rickets and osteomalacia. As additional links between the two processes he cites the relative frequency of hypertrophy of the parathyroids in osteomalacia, and the almost exact similarity in the changes of rachitic teeth and those of his animals. Although a connection between tetany and rickets has long been noted, it would as yet be premature to ascribe all cases of both unreservedly to lesions of the parathyroids. It has been found by Badt and Klose[3] that changes analogous to those of rickets and osteomalacia occur in young dogs after removal of the thymus, so that at present the pathologic basis of these diseases cannot be stated with any degree of certainty. However, it is possible that as complicated a process as the calcium metabolism of the body may be influenced by any one of several factors, and that the similar clinical findings may have various sources, as for instance is the case with experimental diabetes. Apparently, however, the problem of the etiology of rickets and osteomalacia is in a fair way toward being made clear, and its ultimate solution should merely be a matter of farther work along lines already indicated.

3. See editorial: The Function of the Thymus, THE JOURNAL A. M. A., March 25, 1911, p. 898.

SANITARY DISPOSAL OF EXCRETA WITHOUT SEWERS

Farmers' Bulletin 463, entitled "The Sanitary Privy," recently issued by the Department of Agriculture, is of interest not only on account of its contents but also because it shows useful cooperation between two federal departments for the promotion of public health. The pamphlet was prepared by Drs. Stiles and Lumsden of the Public Health and Marine-Hospital Service, and embodies material previously published in bulletins of that service, reference to which has already been made in THE JOURNAL.[1] Fortunately it is now published and distributed by the Department of Agriculture. We say fortunately, because the latter arrangement secures a wider circulation, since Congress, we believe, has authorized the printing and reprinting of farmers' bulletins up to 1,000,000 copies, whereas it limits the publications of the Public Health and Marine-Hospital Service to one or two editions of 5,000 each.

Drs. Stiles and Lumsden for some years have been making a study of certain diseases which are particularly incident to farm life, and in a preliminary statement Secretary Wilson appeals to the American farmers to consider carefully the facts presented in this bulletin and to make practical use of the suggestions.

The authors discuss in popular language the diseases spread on the farm by soil pollution, emphasizing especially typhoid fever and hookworm disease, but also referring to dysentery and various other diseases of parasitic origin. There are, it is said, 2,000,000 cases of hookworm disease in the United States, all the result of soil pollution and mostly on the farm, and about 400,000 cases of typhoid annually, and most of the cases are due to the lack of proper disposal of human excreta. With the rapid improvement of sanitary conditions in the cities, typhoid is becoming more and more a disease of rural prevalence and origin, and in the country its spread results largely from the use of insanitary outhouses. Hence the disposal of excreta on the farm is one of the great sanitary problems, one that affects the whole nation, and the appearance of this practical bulletin is timely.

The authors discuss the shortcomings of the conveniences usually found on the farm and then describe three types of sanitary privies—those constructed on the "dry system," the "wet system," and the type developed at the Hygienic Laboratory in which use is made of the principle of the septic tank. The advantages and dis-

1. Discussion on the Sanitary Outhouse, THE JOURNAL A. M. A., Jan. 28, 1911, p. 255.

advantages of each are pointed out. The question of the ultimate disposal of the excreta is also discussed. The use of human excrement as fertilizer, except after its thorough disinfection, is unqualifiedly condemned; this practice is prohibited by law in some states. Reference is also made to the striking experiments of Stiles and Gardner[2] which show that fly larvæ in human excrement, buried six feet under sand, are able to make their way in large numbers to the surface.

The practical character of the bulletin is shown by the fact that the authors have secured from a practical carpenter precise directions, with diagrams, for building a sanitary privy; they state that any 14-year-old schoolboy of average intelligence and mechanical ingenuity can, by following the directions, build such a privy at a total cost of five to ten dollars. Directions and estimates are also given for the building of sanitary outhouses for country schools and churches; they would be equally useful for country boarding-houses. Owners of the latter would do well to give these suggestions careful consideration, for already many city people are prevented from going to the country by the primitive sanitary arrangements existing there.

Some skepticism may be felt about the adoption by farmers of such suggestions as those contained in this bulletin; but when one considers how widely many other suggestions made to farmers (the building of improved barns, poultry houses, silos, the use of hog cholera serum, etc.), have been accepted although relatively expensive, there is reason to believe that these suggestions will before long be rather widely accepted by the intelligent element of rural communities. The physicians practicing in such communities can do much in this work, for people are in the most receptive mood for suggestions when they are suffering, or are threatened with suffering, as the result of the neglect of proper precautions. Such activity will also redound to the credit of the physician, for the public is judging members of the profession more and more by their attitude in respect to preventive medicine and their ability to protect the well from communicable diseases.

Physicians residing in a rural community, or having occasion to go there, will be interested in the perusal of this bulletin, which may be obtained by applying to the Department of Agriculture or to a congressman.

Variations in Male and Female.—The greater tendency of males to both physical and psychic variations from the normal, says Stewart (*Medical Record*), has been taken as an indication of their less stable character. Without enumerating the long list of well-known abnormalities and malformations, as clubfoot, harelip, cleft palate, supernumerary digits and nipples, common in both sexes, suffice it to say that, with the exception of congenital dislocation of the hip and a few other minor malformations, such variations are much more frequent in males than in females. The same rule holds good in regard to psychic variations. If geniuses, including musical and mathematical prodigies are more frequent among men, idiots and cranks are less frequent among women.

2. Public Health Reports, Aug. 25, 1911, p. 1277.

Current Comment

WHAT'S THE MATTER WITH KANSAS?

"Professor" Samuels of Wichita, Kansas, is a faker who claims to cure practically every disease in the calendar. He gets his victims through newspapers, and he evidently gets a great many, for he is able to carry full-page advertisements in the large metropolitan dailies, to say nothing of hundreds of smaller advertisements in less expensive newspapers. His "remedy" is an "eye-water." Analyzed by the chemists of the American Medical Association, it was found to consist essentially of a mixture of equal parts of salt and sugar in hydrant water. The price of the mixture is $25 an ounce. It does not take an expert to prove that such a mixture will not cure consumption, blindness, paralysis, Bright's disease or any of the hundred other ailments that Samuels professes to treat. Expert knowledge is not required to declare the treatment a fraud and the "Professor" a swindler. It is a conservative statement to say that a man who will take money from a consumptive, an epileptic or a victim of the morphin habit under the pretense of curing his disease with a mixture of sugar, salt and water is an unconscionable scoundrel. We believe that this man can be put out of business under the existing state laws in Kansas. If on no other grounds, he can at least be declared a swindler for obtaining money under false pretenses. Unless we are mistaken, this man tried to work the same scheme in Oklahoma, but the authorities there made life such a burden for him that he sought a more complaisant community. This he has apparently found at Wichita, Kansas. What's the matter with Kansas?

KEEP THE TOOTH-BRUSH CLEAN

Another time-honored and long-cherished institution has been attacked by the ruthless scientist and hygienist. This time it is the tooth-brush. Soap and the tooth-brush have hitherto been considered almost indispensable adjuncts of civilization. After years and years of patient teaching of the young that correct personal hygiene required the use of the tooth-brush, after its adoption as a necessary or desirable part of the accouterment of the United States soldier, who proudly carried it, stuck in the band of his hat, in the campaigns in Cuba, Porto Rico, the Philippines and in the Boxer Rebellion in China, where it was observed and commented on favorably by the observers of the sanitary departments of the armies of the world, it is now to be discredited because it is not conformable to modern hygiene and sanitation. The tooth-brush, according to Smale and Jones,[1] becomes septic after being used once, each bristle becoming an inoculating needle by which the person using it may become inoculated with the multitudinous germs which flourish on it, producing pyorrhea alveolaris, with such serious possible sequelæ as anemia, gastritis and arthritis. They propose as a solution of the difficulty that a new brush be used each time,

1. Smale, H., and Carmalt-Jones, D. W.: Bacteriology of Tooth-Brushes, Brit. Med. Jour., Aug. 26, 1911. Abstr. in The Journal A. M. A., Sept. 23, 1911, p. 1086.

or that the brush be boiled for five minutes after each using, or that it be kept in a 1 per cent. solution of trikresol or a 10 per cent. solution of formaldehyd. It is a bit disconcerting to think that we have been going along all these years teaching the correctness of the use of the tooth-brush only to find that instead of being an aid to good personal hygiene it has been an instrument for creating or perpetuating infections. How long will it be before that remaining bulwark of civilization—soap—is also attacked and the warning given that the unctuous substance that we smear over our faces and bodies daily is nothing more nor less than an emulsion of deadly bacteria, and that it is only because of our high degree of natural resistance that we have not succumbed? Seriously, however, the contention of Smale and Jones should not be ridiculed, nor, on the other hand, should this useful instrument be discarded lest a worse state follow. But the danger of auto-inoculation with bacteria from the mouth by the brush perhaps is not to be feared so much as its contamination by extraneous matter from lack of proper care in keeping. The methods of disinfection suggested by Smale and Jones, while ideal, are not practical, because they will not be carried out. An effective method, and better because practical and more simple, would be to wash the brush thoroughly after using, rinse it in an antiseptic solution (boracic, for example) and then keep it in a bottle corked with antiseptic cotton. The hygienic condition of the tooth-brush is certainly a matter worthy of attention.

EXPENSIVE SUGAR OR CHEAP SACCHARIN, WHICH?

We have already called attention to the fact that, based on the findings of the referee board, the government has declared the use of saccharin in foodstuffs illegal. This official decision, made in April of this year, was to go into effect July 1, 1911. Immediately the makers of saccharin brought pressure to bear at Washington to have the time extended in which the use of their product in foods would be legal. The appeal was granted and the sophisticators of foods—and others—were officially notified that they might continue to use saccharin in the place of sugar until Jan. 1, 1912. Now as the time of probation draws to a close, the saccharin-makers are again appealing to Washington. The summer of 1911 has been an exceptionally hard one on the sugar-refiners. As every one knows, the price of sugar has steadily risen and there is every indication that it will go still higher. Under such conditions, it is natural that those manufacturers of foodstuffs who are more concerned with personal profits than public health should see in the present shortage of the sugar-crop the chance of a lifetime to substitute saccharin for sugar. Evidently then the demand for saccharin is likely to be greater within the next few months than it has been for years. This fact has been taken into account in Europe by the calling of an international conference to prevent the illegal use of saccharin, reference to which has been made in THE JOURNAL.[1] Most European nations have long forbidden the use of saccharin in foodstuffs. Great Britain, while not forbidding its use, puts a prohibitive tax on the product so that in that country it is practically as cheap to use sugar as saccharin. It now remains to be seen whether the three secretaries—the Secretary of Agriculture, the Secretary of Commerce and Labor and the Secretary of the Treasury—will again extend the period of probation for the use of this drug.

1. Contraband Trade in Saccharin, Paris Letter, THE JOURNAL A. M. A., Oct. 7, 1911, p. 1219.

THE VIABILITY OF HOOKWORM EGGS

Completing some experiments begun in 1910 by Stiles and Gardner, a partial report of which was given last year, Stiles and Miller now make a final report[1] in regard to the viability of hookworm eggs. One object of the experiments undertaken was to ascertain how long the eggs would remain viable under methods of treatment similar to those present in connection with the barrel privy devised by Stiles for use in country districts. Stiles and Miller summarize their findings as follows: In fecal material kept in water in the examinations made after 68, 117, 144, 317, 323, 349, 357 and 358 days, all the hookworm eggs identified were dead. The longest period after which they found eggs alive under the conditions described was seventy days. They conclude that it seems fairly well established that fermentation for four months in the privy devised by them kills all the hookworm eggs, and that fermentation for three months will kill nearly all of them. This shows that the hookworm eggs are most tenacious of life. They survive probably for a longer time in the earth. Efforts to eradicate all possibility of infection in the highly polluted soil of some of the southern communities will, therefore, be a long, difficult task.

BOGUS SCIENTIFIC INSTITUTIONS

To a certain type of men the sign is of more importance than the thing signified. Europeans have long ridiculed what they are pleased to call the American weakness for bizarre and pseudo-scientific degrees, although, as a matter of fact, this foible is less an American than a European characteristic. In the Berlin Letter of this week,[2] reference is made to a fake scientific organization called the "Italian Physio-Chemical Academy" (Accademia fisico-chemica Italiana) of Palermo, Italy. This concern, which has been previously exposed in these pages,[3] issues "medals" and "certificates of membership" to such individuals as are willing to pay what these questionable honors cost. This Italian degree factory is not the only institution of its kind in Europe. In England, there is the notorious "Society of Science, Letters and Art of London,"[4] which for the mere nominal sum of one guinea ($5) will furnish an ornate "diploma" in sonorous Latin to those who are desirous of writing the magic letters "F. S. Sc." after their names. The "College of St. Columba," another English degree emporium, dispenses the titles "A. Ph." and "F. Ph." with the privilege of permitting the recipient to wear a hood of scarlet cloth lined with green velvet—all for 63 shillings ($16). Coming nearer

1. Public Health Reports, U. S. P. H. and M.-H. S., Oct. 13, 1911, 2. Page 1380.
3. THE JOURNAL A. M. A., June 29, 1907, p. 2196.
4. Exposed in THE JOURNAL A. M. A., May 20, 1909, p. 1773

home, most readers of THE JOURNAL remember the notorious "St. Luke's Hospital,"[4] which, from Niles, Michigan, issued "certificates of merit" at $20—when it was unable to get $25. After the demise of St. Luke's, it was resurrected as the "Christian Hospital"[5] in Chicago. This, too, after a brief period of activity, received its quietus. Presumably so long as there are individuals whose vanity can be gratified by the possession of a "diploma" or "certificate of membership" whose value is measurable only in dollars and cents, so long—provided the government does not interfere—will degree factories and diploma mills flourish; so long as there are shallow egotists to pour dollars into the hopper, so long will degrees and diplomas be ground out.

ANOTHER INTERFERENCE WITH THE FREEDOM OF CATTLE

This dispatch from Jackson, Miss., appears in a recent issue of the Natchez *News*, regarding the efforts being made in Yazoo County to suppress the cattle-tick:

"The quarantine placed on cattle from Yazoo County appeared to have little effect until the stockmen of that county awakened to the realization that their stock would not be admitted to the Mississippi State Fair, at Jackson, during the latter part of the month. The embargo stung the farmers and they decided to take some drastic measure to eradicate the dreaded tick."

The *News* then gives the proceedings at a meeting of the city council, where strenuous measures were urged to wipe out this blot on the fair name of Yazoo County, and to permit her cattle to appear at the state fair. This is right, nor would any one object to any measures which the Jackson City Council might adopt, to rid the cattle of disease. But, incidentally, how many human beings are there in Yazoo County, Mississippi, to-day who are suffering from tuberculosis and typhoid fever, for example? Nobody knows! Will there be any quarantine against the people of Yazoo County on that account? Oh, no, they can all go to the fair and if any of them are suffering from these diseases, they can communicate the infection to others without hindrance. If one cow died of foot-and-mouth disease in Yazoo County to-morrow the fact would be known in Washington in twenty-four hours, and live stock inspectors would immediately invade Yazoo County. How many women and children died in that county last year? Nobody knows! They are only human beings, not live stock, and in a majority of the states in the union and in all of the southern states, the state pays no attention to the birth or death of a human being. A blooded calf or a pedigreed colt has its birth carefully registered, but the birth of a child is not worth recording. And when it comes to dying, if you are a human being, you can die whenever you like. The state has no money to waste in such "scientific nonsense" as finding out how many of its citizens have died during the past year, or whether the death-rate in Mississippi is growing or decreasing, or what diseases are killing its people. But ticks in cattle—that is a different matter. The cows must not be kept away from the state fair.

4. See THE JOURNAL A. M. A., June 24, 1899; Oct. 21, 1899; Nov. 16, 1901.
5. See THE JOURNAL A. M. A., May 25, 1903; June 6, 1903.

Medical News

ALABAMA

Fresh-Air Camp Open.—The Montgomery Antituberculosis League formally opened its fresh-air camp, September 11. The camp is 10 acres in extent, located on a piney hill, and has in addition to a central dining room and kitchen, seven cabins already furnished. The secretary of the league appeals for funds for the maintenance of the camp.

Condemns County Jail.—Dr. William H. Oates, Mobile, state prison inspector, reports that the Madison County jail at Huntsville is more insanitary and less fit for habitation that any other jail he inspected. He has therefore ordered the sheriff to remove all the prisoners from the jail to the Marshall County jail at Guntersville, so that the Madison County jail may be renovated and made habitable.

CALIFORNIA

Insists on Vaccination.—The school board of Fresno has issued an ultimatum that all school children who have not been vaccinated, shall be barred from the Fresno public schools.

Personal.—Dr. John T. Culver, Oak Park, was thrown from his automobile in San Francisco, October 5, and sustained painful injuries.——Dr. Josea O. Perrone, San Francisco, fractured his right leg and suffered internal injuries in a runaway accident near his summer home in Montebello.——Dr. Edwin D. Ward has been appointed assistant health commissioner of Los Angeles, vice Dr. Irving R. Bancroft, resigned.

Many Committed to Asylums.—During August the greatest number on record of commitments to the State Insane Hospital was made. In March, 1910, the month of next highest record, 180 commitments were made, while in August 263 individuals were sent to the state hospital. The number of liquor and drug addicts committed during August was eighty-three, an increase of forty-nine over the figures for the previous month.

Tuberculosis Research Board.—The investigation of tuberculosis conditions in the state for which an appropriation of $5,000 was made by the last legislature, was initiated by the State Board of Health, September 2, when an executive board to have immediate charge of the work was named, consisting of the five following members: Dr. George H. Kress, Los Angeles, president of the State Tuberculosis Association; Charles C. Browning, Los Angeles; Mr. A. Bonnheim of the White Crusaders of Sacramento; Dr. Richard G. Brodrick, executive secretary of the San Francisco Tuberculosis Association, and Miss Katherine Felton, formerly secretary of the Associated Charities of San Francisco.

CONNECTICUT

Appropriation for Epileptic Colony.—The governor-general has signed a bill passed by the general assembly appropriating $147,550 for the construction of buildings, sewage system, water-supply system, power house, etc., for the State Colony for Epileptics, Mansfield.

GEORGIA

Free Typhoid Vaccination.—Dr. J. Payson Kennedy, health officer of Atlanta, announces that he is prepared to administer antityphoid vaccine free of charge to any one who desires.

Personal.—Dr. Lewis M. Gaines, Atlanta, has been elected professor of neurology in the Atlanta School of Medicine and appointed neurologist to the Tabernacle Infirmary.——Drs. John Funkle and E. C. Thrash have been elected assistant pathologists at the Grady Hospital, Atlanta.

New Clinics Opened.—Under the direction of the faculty of the Medical College of Georgia, Augusta, the south side clinic was opened in that city at Twelfth and Mauge streets. The clinic is in charge of Dr. William C. Lyle and will be principally for the use of colored people.——The Morris Hirsch Memorial Free Medical Clinic, Atlanta, was opened October 4, in the Jewish Educational Alliance Building. The clinic is strictly non-sectarian.

Sanatorium News.—At the September meeting of the trustees of the State Tuberculosis Sanatorium, Alto, Captain W. G. Raoul resigned as chariman of the executive committee and was succeeded by Dr. Jeff Davis, Toccoa. Dr. Henry R. Slack, La Grange, was elected vice-chairman. The board decided that as the legislature had reduced the appropriation for maintenance, a charge of $3.50 per week for 75 per cent. of the inmates would be made, beginning October 1; the balance of the inmates will be treated free of charge. The sanatorium has seventy beds, all of which are occupied.

ILLINOIS

Sues for Hospital Permit.—Mandamus proceedings to compel the Oak Park Board of Trustees to issue a license for the construction of a hospital in that village, were filed October 2 by counsel representing the West Suburban Hospital Association.

Personal.—Dr. and Mrs. Benjamin Gleeson and family, Danville, and Dr. Abner G. Downer, Princeton, have returned from Europe.——Dr. Albert E. Campbell, Clinton, has been appointed assistant to the chief surgeon of the Illinois Central System.

Hospital for Lake Forest.—Lake Forest is to let the contract for a contagious disease hospital which is to be one story in height, made of brick, with four wards, two wings, and a detached cottage for the caretaker. The building is to be erected on 3 acres of ground donated by the city.

Charities Conference.—The sixteenth annual State Conference of Charities and Correction will be held in Champaign, October 21-24, under the presidency of Sherman C. Kingsley, Chicago. On Sunday morning the pulpits of Champaign and Urbana will be filled by delegates to the conference. On Monday the Section on Children will meet. The afternoon will be devoted to the needy family, and in the evening a mass meeting of the Section on Correction and of the State Association of Poor-Farm Superintendents will be held. On Tuesday there will be a general meeting presided over by Dr. Frank Billings, Chicago, in which the present condition of charity and correction in the state will be discussed. The afternoon will be devoted to the discussion of the feeble-minded and epileptics.

Chicago

Personal.—Dr. Frederick K. Ream has been appointed a member of the staff of the ear, nose and throat department of the Illinois Post-Graduate Medical School.——Dr. John B. Eaton has returned from Europe.

La Rabida Closes.—The fifteenth year of the work of the Jackson Park Sanitarium has closed. During the season more than 2,500 children were cared for in the sanitarium, nearly 2,000 of whom were ill enough to be placed on the hospital records. Nearly 1,000 mothers were cared for on their visits to the sanitarium during the season.

INDIANA

Hospital for Princeton.—It is reported that the city of Princeton will purchase for $15,000 the Princeton sanatorium, which cost $35,000, and will maintain the institution as a city hospital. This movement has the support of the local members of the profession.

Personal.—Drs. John W. Sluss, John A. Pfaff and Charles L. Cabalzer, Indianapolis, while busy in the operating room of the Deaconess Hospital, October 5, were robbed of their money and jewelry.——Dr. John K. Kingsbury has been appointed assistant bacteriologist to the Indiana State Board of Health.——A banquet was given by the Lake County Medical Society, October 12, in honor of Dr. William F. Howat, Hammond, recently elected president of the Indiana State Medical Association.——Dr. Samuel C. Thomas, Milroy, was severely injured by being run down by a horse recently.——Dr. Asa W. Brown, health officer of Bluffton, has resigned.——Dr. Sherman B. Hitt, Greensburg, has succeeded Dr. Curtis Bland as secretary of Greensburg Board of Health.

KANSAS

Home for Kansas Leper.—It is announced that Mrs. Mike Quint of Ellis County, a Russian, who is afflicted with leprosy, is to be isolated on a farm which will be given her by the state.

Endorses Health Board.—The Shawnee County Medical Society at its meeting October 3, passed resolutions commending the action of the State Board of Health and the health commissioner of Topeka for their admirable work in controlling the epidemic of small-pox in the city, and urging the strict enforcement of compulsory vaccination in the public schools.

MARYLAND

State to Use Typhoid Vaccine.—The State Board of Health has decided on the use of typhoid vaccine in all state institutions.

Monument Unveiled.—At the ceremonies connected with the placing of a stone marker over the grave of Assistant Surgeon Richard Waters, near Washington Grove, Montgomery County, October 11, ex-Governor Edwin Warfield delivered the address before about 1,000 persons. An original poem was read and the monument unveiled by descendants. The ceremonies were in charge of Daughters of the American Revolution and are the first of the kind in the state. A detail of the Maryland National Guard fired a salute.

Baltimore

Personal.—Dr. Max Kunstler has opened a small hospital on the second floor of his residence, where those who need it may receive attention free of charge.——Dr. George H. Everhart sailed for Europe, October 4.

Deaths by Accident.—Nineteen persons died from accidents in September and 323 met with accidents which were not fatal. Among the 342 accidents, nine concerned automobiles; two, horses; ninety-six, street cars; nine, steam cars; while twenty-nine persons were bitten by dogs.

Bazaar for Physicians' Widows' and Orphans' Home.—The ladies in charge of the Home for Widows and Orphans of Physicians will hold a bazaar at 1112 Madison Avenue, November 1-3. Luncheon and supper will be served on each day. Dr. Eugene F. Cordell is treasurer of the home.

Emergency Hospital Planned.—Movement is on foot for the establishment of an emergency hospital in that part of Baltimore bordering on the Patapsco River, and known as Highlandtown and Canton. Dr. William E. McClanahan, health officer of Highlandtown, and Drs. David W. Jones and Michael J. McAvoy, Canton, are in charge of the project.

Personal.—Dr. Howard A. Kelly returned to Baltimore October 9 in good health after his operation.——Dr. Nathaniel G. Keirle, director of the Pasteur Institute and city post-mortem physician, was 80 years old October 10.——Dr. Henry T. Reynolds' buggy was demolished by a street car. He escaped with cuts and contusions and a severe shock.——Dr. Thomas J. O'Donnell, police surgeon, suffered the loss of his motor-yacht *Loyola*. It was totally destroyed at the wharf by fire, caused by back-firing, with a loss of $2,500.

Lectures to School Children.—Mr. H. Wirt Steele, executive secretary of the Maryland Association for the Prevention of Tuberculosis, delivered the first lecture and demonstration of the disease, October 10, before the children of the public schools. He explained the manner in which the disease is contracted and dwelt on the agency of public drinking-cups, dust, filth, bad ventilation, etc. The lecture was illustrated and the bacilli were shown under the microscope. The lectures will be continued daily until all the children have been reached.

MICHIGAN

To Study Occupational Conditions.—With the especial approval of Governor Osborn, the State Board of Health has authorized the secretary to bring about an investigation of the occupational conditions in Michigan, with a view to prevention of unnecessary loss of life and health from conditions that can be remedied. This work is to have the immediate attention of the department, a thorough investigation to be made of all industrial conditions that affect health and life.

Eugenics.—The State Board of Health at its meeting at Lansing, October 13, decided to employ Miss Adele McKinnie, an expert investigator in eugenics from the Eugenics Record Office, Cold Springs Harbor, Long Island, N. Y., as a special medical inspector, to investigate during the next six months the condition and extent of feeble-mindedness and mental deficiency in Michigan. Miss McKinnie's work will begin at the State Home for the Feeble-Minded and Epileptic, at Lapeer, under the immediate direction of Dr. George S. Chamberlain, medical superintendent of that institution.

MINNESOTA

Leper Dead.—After having suffered from leprosy for twelve months, Ludwig C. Dyregrow, a tailor, died September 25, at his home in Minneapolis.

Sanatorium Almost Ready.—The contractors report that the St. Louis County Tuberculosis Sanatorium, Midway, will be ready to receive patients, December 1.

"Tag Day" in St. Paul.—The women in St. Paul in their annual "tag day," October 11, collected more than $15,000, which will be used in the campaign against tuberculosis.——The St. Paul Antituberculosis Society has moved into new headquarters at the New York Life Building, Fifth and Minnesota Streets.

Dr. Wiley Upheld.—The Hennepin Medical Society at its last meeting adopted resolutions upholding Dr. Harvey W. Wiley and expressing satisfaction at the decision of the President in the case. The Northwestern Branch of the American Pharmaceutical Society also passed resolutions expressing confidence in Dr. Wiley.

NEVADA

State Society Meeting.—The eighth annual meeting of the Nevada State Medical Association was held in Reno, October 10-12. At the election, October 12, Dr. Benjamin F. Cunningham was elected president; Dr. Donald MacLean, vice-president, and Dr. Martin A. Robinson was reelected secretary and treasurer, all of Reno. The next meeting of the association will be held in Reno.

NEW YORK

Benefit for Crippled Children.—The annual benefit for Robin's Nest, a home for crippled children, at Tarrytown, netted $1,000.

State Charities Aid Association and Tuberculosis.—This organization has been sending copies of a set of resolutions to the various medical organizations which they believe will further their work in combating tuberculosis. Their slogan is "No Uncared-For Tuberculosis in New York State in 1915."

Cancer and Typhoid Show High Mortality.—The *Monthly Bulletin of the State Department of Health* states that cancer and other malignant tumors have destroyed nearly as many lives as tuberculosis; during July 1,064 deaths were charged to this cause. Deaths from epidemic diseases have been exceptionally few. The only disease that appears to be on the increase is typhoid fever.

New York City

Change of Name and Meeting-Place.—The New York Physicians' Association (formerly the East Side Physicians' Association) will hereafter hold its meetings at Tuxedo Hall, Madison Avenue and Fifty-Ninth Street.

Personal.—Dr. Thomas H. Curtin, coroner's physician, has returned from Europe.——Dr. and Mrs. Canfield, Dr. and Mrs. N. E. Brill and Dr. Charles Langdon Gibson have returned from Europe.——Prof. Silvio Tonnini of the University of Bologna arrived in New York, October 5.

Round Up Bad Food Sellers.—The board of health has been showing up the purveyors of bad eggs, meat and milk. In the court of special sessions, October 8, sixty men were arraigned accused of selling unwholesome or adulterated foodstuffs. The fines ranged from $10 to $500.

To Study Pellagra.—The department of tropical medicine of the New York Post-Graduate Medical School is planning to investigate pellagra in southern states in the spring. This is made possible by the gift for this purpose of $15,000 by Col. Robert M. Thompson and Mr. J. H. McFadden.

Lectures on Skin Diseases.—Dr. L. Duncan Bulkley will give the thirteenth series of Clinical Lectures on Diseases of the Skin in the out-patient hall of the New York Skin and Cancer Hospital on Wednesday afternoons, from November 1 to December 20 at 4:15 o'clock. The course will be free to the medical profession.

Plans for a New Hospital Filed.—The New York Society for the Ruptured and Crippled has filed plans for a new building which will be located on East Forty-Second Street extending from 303 to 325 and through to Forty-Third Street. The old building of the society was sold to the New York Central Railroad. The new building will be of brick and terra cotta and will cost $800,000.

City Death-Rate Again Breaks Record.—The Department of Health announces that the death-rate for this city for the week ended October 7 was the lowest recorded in the statistics of the state. The rate was 12.60 per 1,000, while for the corresponding week of 1910 it was 14.48. The low mortality is due to the decreased number of deaths at all the different ages grouped and is not confined to any one particular period of life. The city was freer from infection than at any time in its history, there being not one death from scarlet fever or measles reported.

NORTH CAROLINA

Personal.—Dr. Houston B. Hiatt, Ashboro, has been appointed local surgeon for the Southern Railway.——Dr. W. H. Hardison, Creswell, is reported to be critically ill in St. Vincent's Hospital, Norfolk, Va., after an operation for appendicitis.——Dr. Charles L. Minor, Asheville, has returned after a summer in the north woods of Canada.——Dr. Joseph Hyde Pratt, Chapel Hill, has been elected president and treasurer of the Southern Appalachian Good Roads Association, and Drs. Archibald Cheatham, Durham, and Chase P. Ambler, Asheville, have been elected members of the executive committee.

OHIO

Fraternity Incorporated.—The Alphi Xi Chapter of the Alpha Kappa Kappa of the medical fraternity has been incorporated in Cleveland.

Club Election.—At the annual meeting of the Celsus Club, held in Akron, September 28, the following officers were elected: president, Dr. Judson A. Hulse; vice-president, Dr. Samuel St. John Wright; secretary and treasurer, Dr. Edmund A. Weeks.

Personal.—Dr. William H. Stover, Tiffin, announces that he is about to retire from active practice.——Dr. William C. Leeper, McConnelsville, has leased property on Kennebec Hill on which he will build a number of cottages to be used as a sanatorium.

Northwestern Physicians Elected.—At the annual meeting of the Northwestern Ohio Medical Society, held in Marion, September 14 and 15, Lima was selected as the next place of meeting, and the following officers were elected: president, Dr. Martin Stamm, Fremont; vice-president, Dr. William A. Belt, Kenton.

PENNSYLVANIA

Diphtheria in Lebanon.—Because of thirty-three cases of diphtheria in Lebanon and more in the suburbs, the local board of health on October 14 closed all theaters and other public meeting places and no services were held in the churches.

Relief Fund for Austin Physicians.—A circular letter received at this office October 16 announces that the secretary of the Medical Society of the State of Pennsylvania, Dr. C. L. Stevens, of Athens, Pa., is authorized to receive the contributions for the relief of physicians who suffered loss by the flood at Austin. Disbursements will be made by the Committee on Benevolence of the society.

Philadelphia

County Society to Entertain Surgeons.—There will be a joint meeting of the Congress of Clinical Surgeons of North America and the Philadelphia County Medical Society, November 8. Following the scientific program the society will give a reception to the visiting members of the congress.

Plea for Special Courses in Sexual Hygiene.—Dr. Joseph S. Neff, director of public health and charities, in his weekly bulletin, made a strong plea for the introduction in the public schools of special courses in hygiene, to instruct children in the facts of life and their sex responsibilities. "Penitentiaries, insane asylums, institutions for the blind and homes for the feeble-minded would not contain 25 per cent. of their population had the present adult generation been properly instructed in their youth in social hygiene."

Municipal Research Bureau Recalls Director.—Dr. Jesse D. Burks will return to this city as the director of the bureau of municipal research. He was released three months ago at the request of the New York Board of Estimate to serve on a commission which is conducting a comprehensive inquiry into the public school system of New York. The bureau of municipal research has given active cooperation in several divisions of the bureau of health, where notable results have been obtained in the reorganization of the work in medical inspection, in milk inspection, child hygiene and the municipal hospital.

Banquets.—A reception and dinner was tendered by the Medical Club of Philadelphia, October 6, to the following newly-elected members of the medical faculty of the University of Pennsylvania: Drs. Gwilym G. Davis, orthopedic surgery; John B. Deaver, practical surgery; M. Howard Fussell, applied therapeutics; Milton B. Hartzell, dermatology; Edward Marlin, surgery; A. M. Pearce, research medicine; A. H. Richards, pharmacology; Alfred Stengel, medicine, and Alonzo E. Taylor, physiologic chemistry.——A banquet was given at the University Club, October 5, by Drs. J. Chalmers Da Costa and Edward Spitzka, in honor of Edward Croker, formerly chief of the New York Fire Department, and Dr. Harry M. Archer, honorary surgeon of the department.

Personal.—Dr. Harvey W. Wiley was one of the speakers at the Succoth Pilgrimage and fourteenth annual meeting of the National Farm School on October 15. Dr. Wiley was the guest of honor at a reception, arranged by the gentlemen's and ladies' boards of the farm school at Dr. Joseph Krauskopf's home in Germantown, October 14.——Dr. W. W. Cadbury, one of the five University of Pennsylvania men who are teaching in the Christian College at Canton, China,

arrived in Philadelphia, October 13.——**Dr. Herbert Fox** has been appointed director of the Pepper Laboratory of Clinical Medicine.——Dr. William T. Porter, professor of comparative physiology in Harvard University, will deliver the fourth of the Weir Mitchell lectures of the College of Physicians, in Mitchell Hall, November 3, on "Shock."

Final Report of Pier Hospitals.—The reports of work done at the Race Street and Chestnut Street piers have been received by Dr. Joseph S. Neff, director of public health and charities and show that the Race Street pier cost $2,500 to maintain and the Chestnut Street Recreation Pier, $1,114.70; that a total of 340 sick babies were treated at the Race Street Pier, of which 241 were discharged, as cured, 30 as improved, 18 as unimproved, 8 transferred to other institutions and 43 died. The Chestnut Street Pier handled the whole question of infant hygiene, together with the instruction of mothers. A total of 10,743 infants were cared for there and 6,745 mothers and care-takers were instructed. Of all the infants, 2,862 were sick and 128 were sent to the Race Street Hospital. A total of 5,666 older children were cared for at Chestnut Street and 80 emergency cases were treated.

VIRGINIA

Personal.—Dr. Elliott T. Brady, Abingdon, has resigned from the State Board of Medical Examiners.——Dr. Aelpfar A. Marsteller, Thoroughfare, has been commissioned captain in the Medical Corps, Virginia Volunteers.

Tablet to Confederate Surgeon General.—At the meeting of the Confederate Memorial Library Society at Richmond, September 29, it was decided to install a tablet in the building on the site of the wartime residence of Brigadier General S. P. Moore, surgeon-general of the Confederate Army.

Academy of Medicine Election.—At the annual meeting of the Roanoke Academy of Medicine, October 2, the following officers were elected: president, Dr. E. Pendleton Tompkins, Roanoke; vice-presidents, Drs. Thomas D. Armistead, Roanoke, and Robert H. Garthright, Vinton; secretary, Dr. Lewis G. Richards, Roanoke, and treasurer, John W. Preston, Roanoke.

Free Treatment at Hookworm Dispensaries.—Free dispensaries, in localities where hookworm exists, are to be established by the State Health Department, which has charge of the contributions of the Rockefeller Commission in the state. Six points in Lunenburg County will be the first and other counties will be organized as rapidly as possible.

WEST VIRGINIA

State Association Election.—At the forty-fourth annual meeting of the West Virginia State Medical Association, held in White Sulphur Springs, September 20-22, Dr. Charles O. Henry, Fairmont, was elected president, and Dr. Arthur P. Butt, Davis, was reelected secretary. The next meeting will be held in July, 1912, at Webster Springs.

County Association Meeting.—At the annual meeting of the Ohio County Medical Association, held in Wheeling, September 18, the following officers were elected: president, Dr. Samuel L. Jepson; vice-president, Dr. Sylvanus S. L. Spragg; secretary, Dr. Earl F. Glass; treasurer, Dr. Reed McC. Baird; censors, Drs. Gustavus A. Aschman, N. Atwood Haning, and Harry M. Hall; delegates to the state association, Drs. Frank L. Hupp, William A. Quimby and John T. Thornton, and alternates, Drs. Samuel L. Jepson, Jacob Schwinn and E. A. Hildreth, all of Wheeling.

GENERAL

Bequests.—The following bequests to hospitals have recently been noted:

Catherine Devency, Philadelphia, $15,000 to the Episcopal Hospital.

Mrs. Helen Hartley Lewis, New York, $125,000 to the new Polyclinic Hospital.

William A. Lawrence, Goshen, N. Y., $5,000 to the Seney Hospital, Brooklyn.

Mrs. Caroline C. Thompson, Bridgeport, Conn., $5,000 for a free bed in the Bridgeport Hospital for colored residents.

Oto-Ophthalmologists Organized.—The Pacific Coast Oto-Ophthalmological Society has been organized in San Francisco, with an initial membership of forty and the following officers have been elected: president, Dr. John F. Dickson, Portland, Ore.; vice-president, Dr. William H. Roberts, Pasadena, Cal.; secretary and treasurer, Dr. Cullen F. Welty, San Francisco; the executive committee, Drs. William A. Martin, San Francisco, Henry La Motte, Seattle, Wash., and John F. Dickson, Portland, Ore.

Milk Standards Commission Meeting.—The Milk Standards Commission of New York, of which Dr. William A. Evans, Chicago, is chairman, and Dr. Charles E. North, New York City, secretary, its membership being made up of health officers, bacteriologists, veterinarians and others interested in and connected with the milk industry, met in New York City, October 5 and 6. The commission recommended the adoption of four grades of milk: (a) certified milk, or its equivalent; the standards being those of the American Association of Certified Milk Commissions and of the Laboratory Section of the American Public Health Association; (b) inspected milk from tuberculin-tested cows from dairies scoring over 70 on the government score-card, temperature 50 F. and below, and bacteriologic count less than 100,000; (c) pasteurized milk with a bacterial count of less than 50,000, and a temperature of 50 F. or below; (d) cooking milk from dairies scoring 40 or less on the government's score-card, with a bacterial count of over 1,000,000; pasteurization required. The commission also recommended that the dirt test, bacteriologic standards, obligatory dating, prohibition of the sale of old milk, and a requirement of a temperature of below 50 F. be made a part of all municipal ordinances. It recommended further that the quality of milk as regards butter fat should be on one of two bases: that cities shall have an ordinance requiring a certain percentage of butter fat, or that dealers shall guarantee a certain percentage of butter fat, and shall be held responsible for the amount thus guaranteed.

FOREIGN

Eugenics at Constantinople.—The cable states that the head of the Armenian church at Constantinople has decreed that henceforth every couple applying to be married by the Armenian church must present a certificate from a qualified physician stating that both are in perfect health.

Epidemic Poliomyelitis in the Scandinavian Countries.—A Danish exchange says that there is no doubt that poliomyelitis is assuming an epidemic character in Sweden and also in Denmark. Other advices report about forty-six cases this year at Christiania, with eleven deaths, with a total for Norway of 743 cases and seventy-six deaths, the disease being more prevalent in the rural districts. The epidemic is said to show the peculiar features of former epidemics, especially the way in which only one person within the same household has been attacked, and even within the same building the cases have appeared as isolated; no connection between the cases could be detected. Several of the patients in Christiania were found to have been in the country immediately before the onset of the disease. Flies have been mentioned as disease-carriers; also chickens. The only preventive measure so far has been segregation. The schools have been closed in certain rural districts where the disease has been markedly prevalent; in the cities this measure has not been carried out, only those children who came from households of which a member has been attacked have been kept from school for seven days. In one town the authorities exclude children from school if there is a case of poliomyelitis in the building where they reside, even when not in their own family. Up to September 12 only three adults had been attacked by the disease, and in a more severe form. The health authorities have advised the population to be on the watch for passing paresis, catarrhs, stomach irregularities and brief febrile illnesses as possibly abortive forms of the disease.

CANADA

McGill Opens.—McGill University, Montreal, has a large increase in attendance. Freshmen in the medical department number seventy-one, the largest medical freshman class in six years.

New Hospital.—It is planned to establish a hospital at Yarmouth, N. S., as the only one in that city is its small Seamen's Hospital which is inadequate to the needs of the community.

Tuberculosis Supervision.—Toronto is now caring for 418 cases of tuberculosis under the supervision of municipal nurses. Of this number 117 are in sanitariums.——About 100 cities and towns in Canada are now engaged in the war against tuberculosis.

Opening Academy Meeting.—The Academy of Medicine, Toronto, opened for the season October 4. The president, Dr. Newton A. Powell, delivered the annual presidential address and gave some hitherto unpublished history of the emergency branch of the new Toronto General Hospital, which is to be known as the Shields Emergency Hospital, through the gener-

osity of Misses Agnes and Jane Shields in memory of their late brother, Mr. John Shields.

Chicago Health Exhibit in Canada.—The exhibit of the Chicago Health Department which was taken to the Canadian Exposition, Toronto, is to be exhibited in all the schools of Canada, by request of the governor-general. Canada is also sending a health train and exhibit throughout the dominion.

Tuberculosis in Quebec.—In the report of the Royal Commission on Tuberculosis for the province of Quebec, which has just been published, it is seen that the deaths in that province from this disease are not decreasing. The death-rate in Quebec is higher than in Ontario or any of the adjacent states. It remains stationary in Quebec, while in other countries where a well organized campaign is conducted it is reduced 40 to 50 per cent. The death-rate in the rural districts nearly equals that of the cities and most of the victims range between the ages of 25 and 40 years. It is estimated that Quebec is losing annually $2,000,000 as a result of tuberculosis.

Personal.—Dr. David M. Lineham, Glenboro, Manitoba, and Dr. McGillivary S. Fraser, Brandon, have been placed in charge of the medical work on the Hudson Bay Railroad.——Dr. M. A. Lindsley has been appointed professor of pathology and bacteriology, and Dr. D. Fraser Harris professor of physiology and histology in Dalhousie University, Halifax. Arrangements have also been made with Dr. George L. Sinclair for a course of lectures on mental diseases, and with Dr. Montague A. B. Smith for a course in clinical and practical medicine. ——Dr. Ernest Jones, Toronto, has returned from Germany where he read a paper before the International Congress of Psychologic Therapeutics.——Dr. John George Adami, Montreal, is returning from Rome. He has recently been elected president of the Montreal City Improvement League.——Dr. John L. Day, Montreal, is recovering from an appendicitis operation.——Sir Watson Cheyne, England, accompanied by Dr. George S. Strathy, Toronto, has been on an extensive canoe trip in northern Ontario.——Dr. W. J. Hunter Emory, Toronto, was tendered a complimentary banquet by the staff of Grace Hospital, at the Toronto Club, October 6. He has left for southern California, where hereafter he will reside and devote his attention to fruit farming.——Dr. Herbert S. Birkett and Dr. Ethier, Montreal, have returned from Europe.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Oct. 7, 1911.

Dangers in the Manufacture of Patent Fuel with Pitch

Patent fuel made by mixing pitch with small coal in a proportion varying from 8 to 10 per cent. is produced on a large scale. The mixture is first reduced to dust in disintegrating machines heated sufficiently to melt the pitch and finally pressed into molds to form briquettes. This operation has been certified by the government as dangerous and, as the result of an inquiry, regulations have been proposed dealing with the manufacture. The danger arises from the action of pitch fragments or pitch dust on the eyes and skin of the workmen. The dust causes irritation of the eyes and ulceration of the cornea, while on the skin it produces dermatitis and warts. The warts, primarily non-malignant, become epitheliomatous. They are found on the arms and scrotum. The ingredient of pitch which causes the warts has not yet been ascertained; anthracene has been suggested. It is proposed to prevent dust in the factories by encasing the elevators and disintegrating machinery, and to protect the workmen from dust by the wearing of overalls, and by the removal of the dust from the skin by bathing and washing at the works. The wearing of goggles is to be compulsory.

The Opening of the Medical Sessions at the London Hospitals

The formal opening of the winter session has taken place at the London Hospital by the usual introductory addresses. A large amount of reorganizing and rebuilding has taken place during the last year and is still in progress. Guy's School is largely rebuilt and within twelve months will be second to none in equipment. New chemistry and physics departments have been erected and the physiology department has been considerably expanded. Elaborate arrangements have been made for research in all these subjects. An entirely new building is being equipped for pathology, while the dental department is being greatly extended. At St. Thomas Hospital a school of physical exercise and massage has been opened, under the charge of Mr. R. Timburg, a graduate of the Royal Gymnastic Central Institute, Stockholm. At the London Hospital considerable additions have been made to the dental school and a beginning has been made in providing a students' hostel.

The Insurance Bill and Voluntary Hospitals

At the annual conference of the British Hospital Association, the president, Sir William Corbett, chairman of the Manchester Royal Infirmary, stated that the insurance bill, while not diminishing the work which the voluntary hospitals have to do, would seriously diminish their income by tapping the two main sources of income—the employer and the working man. Each of these would be taxed under the bill for sickness and, therefore, would be less inclined to subscribe voluntarily for the same object. He suggested that the hospitals should receive payment for the insured patients whom they treated.

A Babies' Boarding House

A novel and most useful institution, St. Mary's Nursery College, has been founded in London by Mrs. Bernard Mole. It may be called a babies' boarding house run on original principles. This college fulfils two objects: It trains efficient girls who desire to become children's nurses, and it affords a much-needed home to motherless or uncared-for babies. There are crèches, orphanages and similar institutions to assist mothers of the poorer classes who may be obliged to go out to work, or the widower left helpless with young children. But until this college was founded the fact was overlooked that a similar need exists in higher classes. There are professional women who have to continue to work after marriage, and also widowers who have no means of having their children properly cared for. While doing this the college provides an excellent training for girls who desire to become children's nurses; for these there is a great demand. As the children range in age from 2 weeks to 7 years, extensive experience can be gained. The girls are instructed in the dietaries suitable for babies at different ages, nursery cooking and the cutting out and making of children's clothes. Classes are also held in nursery hygiene, physiology, first aid, kindergarten occupations, games and songs. If the student passes through her course satisfactorily she is entitled to wear the uniform of the college. The fee for six months' training (including board and lodging) is $180.

London's Next Lord Mayor a Doctor

In the coming year, for the first time in its history, London will have a doctor for Lord Mayor. The recipient of the honor is Sir Thomas Crosby, M.D., the alderman next in rotation. He has been for many years engaged in practice in this city.

Hydrophobia From a Fox Bite

A death from hydrophobia contracted in an extraordinary way—from the bite of a fox—has just been the subject of an inquest. Some months ago the deceased was bitten on the hand, through a thick woolen glove, by a hunted fox at the end of a run. He dismounted from his horse, drove back the hounds and held the fox. While doing this he was bitten. He made no complaint about the bite and mentioned it only casually to his friends. He died on the fourth day of his illness and only twenty-eight hours before death did symptoms of hydrophobia become manifest.

Vital Statistics

According to the fifty-eighth number of a most useful publication, the *Statistical Abstract for the United Kingdom*, which has just been issued and contains figures for the fifteen years up to and including 1910, the death-rate of England and Wales has fallen from 17.1 per 1,000 in 1896 to 13.5 in 1910. At the same time marriages have fallen from 15 to 14.3 per 1,000 and the birth-rate from 29 to 25. During this period there has also been a great increase in emigration. In 1896, 57,547 Britons emigrated to British colonies and 104,378 to foreign countries, chiefly the United States. Last year 249,499 emigrated to the colonies, of whom Canada received 156,990 and Australasia 45,701. For the first time on record more went to Canada than to the United States, although the number to the latter was above the average, 132,192. Increasing temperance is shown in the decline of spirits consumed. In 1900, this amounted to 37,000,000 of proof gallons; in 1910 to only 24,000,000 in spite of the increase of population. During the same period the amount of beer consumed fell from 36,000,000 to 32,000,000 barrels.

The Employers' Liability Act

The Employers' Liability Act of 1906 was passed with the sole object of benefiting the workman who might be

injured in his employment without any regard for the principles of justice and has been a fertile cause of malingering and litigation. Like other benevolent legislation passed without regard for economic laws it has proved in some ways a hardship to the very class it was designed to benefit. It tells against a large section of workmen suffering from some slight physical disability which in no way increases the risk of accident and causes employers or insurance companies to protect themselves by refusing to engage this class. It is therefore more difficult for men past middle age who have some slight physical incapacity to find employment. The burden imposed by the act is serious, for it extends not only to the legal dependents of an incapacitated or deceased workman but to his illegitimate dependents, to embrace child, grandchild, parent and grandparent. It has even been held that a posthumous illegitimate child comes within its scope. The most unjust feature of the act is that the employer is liable for death or disability even though it results from wilful and serious misconduct on the part of the workman. Thus, if a mason goes to work intoxicated and falls from a scaffold, the employer must pay. Another extraordinary feature of the act is its discrimination in favor of manual over brain work. A "workman" signifies one who earns his living by manual labor, but it also applies to any one who works under an employer by way of clerical work or otherwise and whose remuneration does not exceed $1,250 per annum. Above this a man who works with his brain is excluded, but a man who works with his hands is included though earning any amount.

Condensed Milk as a Food for Infants

Under the direction of the local government board, Dr. F. J. H. Coutts has investigated the use of condensed milk as a food for infants and has issued an important report. He has found that machine-skimmed milk, condensed milk, is used on a considerable scale. Though the label on the tin declares, as is required by law, that the milk is "machine-skimmed," poverty tempts the mother to buy it and in some cases it seems that the term is imagined to be some guarantee of purity, as the milk is supposed not to be touched by hand. Others imagine that the term implies that the tin contains milk rich in cream which has been skimmed from the top. Sometimes the term "machine-skimmed" is in small type on an obscure part of the label. All these things tend to confuse the purchaser and lead to failure to recognize the real meaning of the warning. Dr. Coutts recommends that tins containing skimmed milk should bear the words "Unfit for Infants." As to the value of whole condensed milk, there is considerable difference of opinion, but Dr. Coutts thinks that there is a tendency to exaggerate the evil effects of feeding on full-cream condensed milk.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 29, 1911.

Fourth International Conference of Eugenics

The Fourth International Conference of Eugenics which has just been held in Paris, has drawn general attention to this science, which, although it has been in existence only about ten years, has already given valuable results in the study of production of domestic animals, grains and plants. Recognition has thus been given to the great importance for biology of the very curious facts discovered about fifty years ago by the Austrian monk, Gregor-Johann Mendel, who being a devoted amateur gardener, performed many experiments in the crossing of plants, especially peas. The results of these experiments, published in a little-read book, remained unnoticed until 1900, when three naturalists studying independently the variation of heredity, Hugo de Bries, Correns and von Tschermak, were led to discover the work of Mendel. New researches soon confirmed what were thereafter called Mendel's laws. Are the principles of genetics destined to enter rapidly into the domain of perfecting races? Certain enthusiastic savants seem to think so. Some skepticism on this point, however, seems justified. Materials are still lacking to permit the categorical assertion that Mendel's laws apply to man and in particular to pathologie heredity in man. It is, however, in man that the study of the problem meets the greatest difficulties. Experiment is of necessity excluded; and moreover the animal and vegetable races are more pure than the infinitely hybrid nations of the west of Europe and the United States. Moreover, it is possible to know only a few human generations; in the space of thirty years one may have thirty generations of peas but hardly two generations of man.

An interesting communication on the mechanism of the variation of races and the molecular transformation which accompanies these variations was made at the conference by Dr. Armand Gautier, professor of chemistry at the Faculté de médecine de Paris. The theories of Lamarck and Darwin do not account for the abrupt and apparently spontaneous modifications which are often noticed in plants and animals when they are observed in sufficient numbers. According to Professor Gautier these abrupt variations are the principal origin of races. They may be attributed to two preponderant, if not exclusive, causes. 1. The action of a foreign fecundating plasma on the vegetable or animal ovule. 2. The symbiosis of vegetative plasmas belonging to different races, sometimes to different species, but adapted to enter in coalescence, that is, to grow and to functionate in intimate union with the plasmas which they modify. The modifications thus caused are not gradual but sudden. They even transform the chemical constituents of the new plant or animal. Gautier is disposed to believe that it is by sudden variations of this kind that the various animal and vegetable species are formed with their present intervals and their reluctance to mingle.

M. Louis Blaringhem of the Sorbonne, explained the plan formed by Dr. Roux, director of the Pasteur Institute, to study various temperaments and their resistance to diseases. A close relation seems to exist between diseases and the coloring of individuals. Guinea-pigs in this respect present interesting peculiarities. Experiments were undertaken at the Pasteur Institute to obtain pure strains of red, gray, black and white guinea-pigs. It appeared that white guinea-pigs are very prolific and produce more females than the red, but they are also much more susceptible to [non-infectious] diseases than the red, although more resistant to infectious diseases.

The Rôle of Military Physicians in the Pacific Penetration of Morocco

Dr. Toubert, chief physician of the army and former director of the sanitary service at Casablanca, has just published an interesting article on the pacific penetration of Morocco by medical action. At Morocco the practice of the indigenous medicine and pharmacy is absolutely unrestrained. There is a distinct line between the indigenous medicine and surgery. Surgery is, as it was once in France, in the hands of barbers. They are skilful in the use of cupping-glasses and understand the good effect of the cautery well applied. Medicine, in the hands of empirics and especially in the hands of the marabouts, consists in the prescription of common plants and various minerals and especially in the distribution of little sachets containing paper covered by Arabic figures which act mysteriously by long contact with the diseased part. Under these conditions it is easy to understand that the often ready success of modern medicine and surgery rapidly inspire the Moroccans with confidence in our military physicians, and this all the more, since the greater number of physicians attached to the French consulates are young military physicians called to these responsible posts because of the knowledge of the indigenous medicine which they have acquired in Algeria and in particular their knowledge of the Arab language and of the psychology of the Mussulman races. The civilizing influence of France in Morocco finds a powerful aid in public sanitation and hygiene. In this respect the military physicians find valuable collaborators among the natives of high rank and Moroccan functionaries with whom they have had occasion to form professional relations on coming to Casablanca, and who are generally much impressed by a visit to the campaign hospital at Casablanca. When it becomes necessary to combat small-pox, exanthematous typhus and recently, the plague, the powerful collaboration of these former patients was always received by the physicians.

Physical Culture in the Army

Impressed by the unsatisfactory gymnastic records of the candidates recently received at the military school, M. Messimy, minister of war, has decided to raise the physical requirements in the examination for admission to these schools. He insists that the physical culture of future officers ought to be carried to the same point as their general culture. The minister is taking an interest, moreover, in developing physical culture in the army, especially among the officers.

An Anti-Alcoholic Federation Among Workmen

The scourge of alcohol, to which for a long time the working class has been very indifferent, has begun to interest them. There has been recently organized a Fédération ouvrière antialcoolique, which is sending out an appeal to all the syndical

organizations inviting them to take part in anti-alcoholic propaganda. The federation has already held several meetings and given moving picture lectures in Paris.

Cholera in Tunis

The sanitary situation of the region of Tunis is at present inspiring great uneasiness. Cholera which appeared in some place in the suburbs has now penetrated into the Arab city. Up to the present the epidemic has made victims only among the Jews and natives; the Europeans have been exempt.

Deaths

Dr. H. C. Lutz, *agrégé* libre of the Faculté de médecine de Paris, and Dr. Louis Grandeau, former dean at the Faculté des Sciences de Nancy and professor of agriculture at the Conservatoire national des arts et métiers, have just died at Paris.

Creation of a Pasteur Institute at Algiers

A Pasteur Institute has just been established at Algiers, the technical and administrative direction of which is undertaken by the Pasteur Institute of Paris. This direction has been entrusted to Dr. Calmette. The scientific make-up of the new institute comprises a service for rabies, a service of bacteriology applied to medicine, an antimalarial service, a service of agricultural microbiology and a veterinary service. The site on which the new buildings are being constructed covers an area of about 2½ acres, in one of the most beautiful spots in the suburbs of Algiers. The architecture of all the buildings is of the simplest, without any costly decoration, and the details of the interior arrangement have been carefully studied so that the expense of the undertaking may be reduced to a minimum, and also with an eye to furnishing all the desirable conveniences for future workers in the laboratories. Thoroughly equipped laboratories are close at hand to each service. Daylight is plentiful everywhere, and the grouping of the laboratories on the northeast side of the building prevents the sunlight from being an annoyance in the microscopic work. One interesting detail is that all the outside openings are covered with brass wire netting, and each door is protected on the inside by a screened vestibule, so as to make it impossible for any fly or mosquito or other winged insect to get inside.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, September 28, 1911.

Personal

Professor König of Greifswald has been elected as successor of Professor Friedrich who goes to Königsberg as director of the surgical clinic.

Agreement Between Germany and Great Britain in the Campaign Against Sleeping Sickness

A few weeks ago an agreement with reference to the combating of sleeping sickness in the protectorate of Togoland and in the Gold Coast Colony was effected between Germany and Great Britain. As the basis of the agreement, both governments shall investigate and keep each other informed of the incidence, extent and spread of sleeping sickness in the regions mentioned and shall treat persons affected with the disease and take precautionary measures against this disease in proportion to the means at the disposal of the governments of the territories involved. The two governments shall also have the right to restrain commerce at the frontier by such measures as seem necessary to hinder the spread of sleeping sickness but are required to communicate to each other without delay the measures adopted. The agreement which has been concluded for three years takes effect December 1 of this year and is to remain in force for an additional year so long as notice is not given by one or the other party six months before the expiration of the period of validity.

Sectarian Objection to the Acceptance of a Medical Hospital Intern

Last year an unpleasant sensation was aroused by the fact that the director of a hospital, situated in a suburb of Berlin, refused to accept a medical "praktikant" intern of the Jewish faith, who had announced his desire to take his "practical year" in that institution before obtaining his degree, the refusal being based on the assertion that the director's assistants refused to have anything to do with a Jewish medical "praktikant" and that he must refuse the appointment in order to avoid conflict. There is some doubt whether the director was in the position to restrain his assistants from expressing their antisemitic feelings and to lead them to a better view. At any rate it was very unwise in him to inform the "praktikant" of this reason for his refusal. This view was also expressed in the medical press and in the Berlin-Brandenburg medical council (*Aerztekammer*), and it was also the subject of a complaint against the director addressed to the board of managers of the hospital, but all without reaching any result.

A short time ago the executive committee of the Prussian medical council (*Aerztekammer*) addressed a communication to the imperial chancellor with reference to this matter, requesting that he should officially publish a statement that it was not permitted to a hospital to refuse a "praktikant" intern for sectarian reasons. The answer of the imperial chancellor just published is as follows: "In the decree for the order of examination of May 28, 1901, it is not contemplated that the obligation to accept every candidate who applies shall be imposed on hospitals which are entitled to receive 'praktikant' interns. There seems to me to be little occasion for official interference with the widest freedom of choice as to application and acceptance on the part of candidates as well as of the hospitals, because the number of places for 'praktikants' in Prussia is more than double that of the candidates who have passed the examination, and therefore it is possible for every candidate to find a place for his practical year to correspond to his legitimate wishes. Any official action of the character desired would only have the effect of bringing sectarian matters into the field of medical education which is naturally neutral. I would prefer therefore to refrain from any action in this direction." In the professional journals this answer of the imperial chancellor is unfavorably criticized, but I cannot see the validity of this criticism. In fact there are enough places for all these candidates and it will never happen that a director of a hospital will be compelled to accept a "praktikant" who is not agreeable to him. [The term "praktikant" as used here refers to those students who have passed their examination, but are required to spend a year in some hospital before receiving their license to practice.]

International Tuberculosis Conference

An important meeting took place under the presidency of Prof. B. Fraenkel for the discussion of international tuberculosis questions, in which a number of domestic and foreign members of the international tuberculosis conference participated. It was decided to hold the next international tuberculosis conference in Rome, April 11 to 13, 1912, and to discuss as the most important questions, human and bovine tuberculosis, specific treatment, and the participation of woman in the campaign against tuberculosis. Also measures are to be taken to protect the symbol of the international tuberculosis association, the double red cross, against misuse. Twenty-eight countries belong to the association.

An Italian Fake Scientific Academy and Its Dupes "Honorary Members"

For some years from time to time, to the entertainment of the initiated, it is announced in the medical and daily press that a more or less well-known physician has been elected an honorary member of the Italian Physio-Chemical Academy of Palermo. These announcements are made repeatedly, although it has been pointed out in the professional press that this concerns a downright swindle by two Italian sharpers. These sharpers are speculating, not unsuccessfully, in vanity, and even prominent professors in German universities have become their victims. Now cruel fate has brought it about that one of the most noted and successful Berlin quacks has also been chosen as an honorary member of the academy, and this distinction has naturally been inserted among his other advertisements. The Berlin chief of police has consequently taken occasion in an official notice to show the true character of the academy. The *Deutsche medizinische Wochenschrift* in giving a notice of this announcement adds the following: "Probably this announcement will at least prevent further distinguished physicians or such as would like to be so from falling victims to the Italian swindle. The warning published already years ago in our weekly and other medical journals and later repeated has not been sufficient to hinder even university professors from accepting this 'honorary membership.' The noted Berlin quack in question has published a list of his brother members in this academy in a statement in reply to the warning of the chief of police. Each of those whose

names are found in this list may well complain with Gretchen: *Mir tut es in der Seele weh, dass ich mich in dieser Gesellschaft seh.* 'It pains me to the soul to find myself in such company.'"

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 24, 1911.

The Third Meeting of the German Urologic Society in Vienna

This society convened in Vienna on September 17 and lasted three days which were devoted to a great deal of scientific and other valuable work. The president, Professor Zuckerkandl (Vienna), welcomed the guests, who were also entertained at a concert by the doctors' orchestra of Vienna. A notable feature of this congress was the absence of the usual distracting social diversions, which have been deplored so often after previous congresses. In the unanimous opinion of all present the work done was of a high character. The part played by the Vienna school of urologists and anatomists was very brilliant, but the internists of this city were conspicuous by their passive attitude. A *Festnummer* of the *Wiener medicinische Wochenschrift*, containing numerous articles by eminent surgeons, was distributed among the members and received much attention. The committees for the next meeting (which will take place in 1913 in Berlin) were elected on the last day; von Koranyi and Oberländer were made vice-presidents, while Casper was elected president in place of Zuckerkandl. Only a few of the more interesting chapters of the transactions will be mentioned. Great attention was paid to the discussion on "Permanent Results of Removal of Tuberculous Kidney," which was introduced by Israels (Berlin) and Wildbolz (Berne). Both surgeons urged the necessity of removal of the diseased kidney as early as possible, provided the other kidney be normal. Tuberculin should not be employed, as it might hasten the course of disease, or cause valuable time to be lost in waiting. The majority of those present were in favor of these measures and from the figures mentioned in the discussion it appeared that the mortality following the operation is low, the benefit to the patient high, the prognosis good in early cases. Blum mentioned that tuberculous meningitis is a much more frequent complication of tuberculosis of the kidney than, for instance, of pulmonary phthisis.

The discussion following Casper's paper on prostatectomy was of great interest. The authors agreed as to the comparative safety of the operation, even in very aged persons (80-88 years), provided that no septic focus had already weakened the patient excessively. Regarding the method of operation, each surgeon has to find out which way suits him best, although Freyer's enucleation seems to be the most reliable one. Certain connections between the prostate and diabetes were studied by Necker (Vienna). Dr. Götzl (Prague) has made experiments relating to anaphylaxis caused by repeated injections of testicular extracts. He has found that the relations between man and animal are of the nature of specificity of organs, but not of the genus, or in other words, that the extract of a human testicle acts on the animal in the same way as the extract of the animal's testicle. He therefore expects that it will be possible to influence the human organism by extracts from animals' testes.

The present position of the urologist in regard to urethroscopy was discussed by Oberländer (Dresden) and Wossidlo (Berlin), and in regard to cystoscopy by Paschkis (Vienna) and Gross (Vienna). These two diagnostic methods are at present indisputable and must be used in every case, especially where the symptoms are masked, but they seem to be a little neglected by surgeons on account of the results obtained by kidney surgery. The value of vaccines was illustrated in a paper by Dr. Reiter (Berlin), who found them very useful in *B. coli* infections of the urinary organs of grown-up persons, less so in children. Bilharziasis was demonstrated and discussed in a paper by Dr. Pfister (Cairo), who also showed several specimens from ancient Egypt, proving that the disease was known in those times when a special goddess of Bilharzia was worshiped in Upper Egypt.

A very valuable addition to the papers was the demonstration by Professor Tandler, of anatomic preparations dealing with the organs in question. These demonstrations were made in his anatomic laboratory, and the dissections elicited the unanimous admiration of the audience. Especially the relations of the female ureter to the uterus, and the changes to which it is subject during pregnancy, were most clearly visible. And with these demonstrations the congress came to an end.

Miscellany

REINFORCED COTTON WADDING

A New Material for Use Under Plaster-of-Paris Dressings

Robert D. Maddox, M.D.

CINCINNATI

I have had made, for use under plaster-of-Paris dressings as a protective or padding, a new material, which, judging from the experience of others and myself, I find to meet the desired conditions more nearly, and to be, because of its cheapness, convenience, elasticity and accuracy of application, superior to anything that may be had at present for this purpose, with the exception of stockinet and felt, as especially indicated.

This material is essentially a good grade of cotton wadding starch-glazed on one side, which is reinforced by attaching to the other side a coarse gauze by means of starch size, so as to form a double-faced fabric of single thickness, one side of which is gauze, and the other cotton wadding.

The wadding is of two thicknesses, technically known as two- and four-pound weight, in order to provide a light or heavy protection as is indicated, while the starch-glazed face renders the dressing reasonably non-absorbent. In laying down the wadding, long-fibered, commercially clean cotton has been used, which gives a resilient elasticity and reduces packing or "caking," with subsequent loosening of the dressing, to a minimum, while making the dressing soft and non-irritating. The cost of this material will probably be about the same, weight for weight, as that of the ordinary cotton batting or sheet wadding that is now used and less than that of canton flannel. For convenience, the rolls have been made 6 yards long by 36 inches wide, from which pieces of suitable widths, usually 3 to 6 inches, may be cut as required by means of a sharp knife, and applied spirally as an ordinary roller bandage, face side to skin, with edges either in apposition or overlapping; or a piece may be cut of sufficient size to make a continuous covering of single thickness over the part, the edges of the material being drawn together and fastened by means of a needle and thread.

The length of the piece so cut should be slightly longer than that of the plaster in order that it may be turned back and caught by the last turns of the plaster bandage to finish the top and bottom of the cast. A preliminary report of this material was deemed necessary, owing to the fact that, through error, some of this reinforced wadding made for experimental purposes was sold before the experimental work was completed.

I have made, experimentally, a similar combination of starch gauze and sterile cotton, surgically clean and highly absorbent, and believe it to be an ideal material for all forms of surgical dressings, particularly in conditions in which heavy dressings are required.

Comparative Chances of Life of the Sexes.—A noted English statistician has calculated that of two children, a boy and a girl, born on the same day, the boy will have only seventeen chances against eleven of living one year, while the girl will have twenty-one chances against eleven. From the age of 5 to 15 there appears to be but little difference, but from 15 to 19 the critical period in the life of the female, the boy will have 269 chances and the girl 277 chances of living against one of death. This advantage in favor of the female increases, especially from 35 to 75, when the ratio drops slightly till after 80, when the man will have only three chances of life against one of death, while the woman's chances will be much greater.—Stewart in *Medical Record*.

The Power of Heredity.—"He who inherits a predisposition to insanity," says Maudsley, "does not necessarily get it from a parent who happens to be insane—no, not even though his father was insane when he was begotten, or though in madness his mother conceived him. He gets it from where his parent got it—from the insane strain in the family stock."

Marriages

JOHN MASON LITTLE, M.D., Boston, Mass., to Miss Ruth Esther Keese of Ashburnham, Mass., at St. Anthony, N. F., October 1.

W. L. DELEVAN, M.D., to Miss Alfretta Bingley, both of Hagerstown, Md., at Martinsburg, W. Va., October 3.

GROSBECK WALSH, M.D., Cristobal, C. Z., to Miss Nancy Irvin of Ohio, in San Francisco, August 29.

WILLIAM OSCAR LA MOTTE, M.D., Riverside, N. J., to Miss Sue C. Hall at Finksburg, Md., October 11.

CHARLES J. SKWOR, M.D., Milladore, Wis., to Miss Rose Heunen of Fond du Lac, Wis., October 3.

WILLIAM J. C. LAMB, M.D., to Miss Marie Antoinette Keller, both of Homestead, Pa., October 4.

FREDERICK GARRISON, M.D., Baltimore, to Miss Catherine Soper, at Elkridge, Md., October 4.

JOHN H. MORRISON, M.D., to Miss Coila Myers, both of Kansas City, Mo., September 26.

ROBERT RUSSELL HOLLISTER, M.D., to Miss Susan Holdrege, both of Omaha, Neb., October 4.

JOHN ALBERT SEABOLD, M.D., to Miss Delphine McMenamy, both of St. Louis, October 2.

LEO G. BARTELS, M.D., to Miss Pauline Becker, both of St. Louis, October 1.

Deaths

Christopher C. Reid, M.D. Albany (N. Y.) Medical College, 1864; a member of the Medical Society of the State of New York; one of the founders of the Oneida County Medical Society, and first president of the Rome Medical Society; examining surgeon for the New York Central Lines for twenty-five years, consulting physician to the Rome Hospital and one of the incorporators of the Rome Home for the Aged, Indigent and Infirm; donor of the Nurses' Home and the new operating room to the Rome Hospital; died at his home in that city, aged 72.

Moses Craft Lathrop, M.D. Worcester (Mass.) Medical College, 1852; a member of the American Medical Association; said to have been the first surgeon in New Hampshire to operate for appendicitis; assistant surgeon of the Nineteenth Iowa Infantry; surgeon of the Fourth Engineers and Corps d'Afrique—Ninety-Eighth United States Colored Infantry—during the Civil War; president of the Dover Medical Society and vice-president of the New Hampshire Medical Society; died at his home in Dover, September 28, aged 81.

Neal Mitchell, M.D. Long Island College Hospital, N. Y., 1880; of Jacksonville, Fla.; a member of the American Medical Association, and formerly president of the Duval County (Fla.) Medical Society; a member of the state examining board for the fourth judicial district and of the Duval County Board of Health; a pioneer practitioner of Jacksonville and one of the heroes of the yellow fever epidemic of 1888; died at his summer home in Readfield, Me., September 30, from tuberculosis, aged 55.

Daniel Dechert, M.D. University of Pennsylvania, Philadelphia, 1871; for one term treasurer of Schuylkill County, Pa., and for twenty years coroner and deputy coroner; county medical inspector for the State Board of Health; a member of the Schuylkill County Medical Society; died at his home in Schuylkill Haven, October 4, from uremia, aged 65.

Charles William Spayd, M.D. U. S. War Board, 1861; University of Pennsylvania, Philadelphia, 1866; surgeon of the Fifty-Third Pennsylvania Volunteer Infantry, during the Civil War; physician of Luzerne County, Pa., from 1867 to 1872, and coroner from 1881 to 1884; died at his home in Wilkes-Barre, September 29, from diabetes, aged 71.

Luther M. Perkins, M.D. Missouri Medical College, St. Louis, 1886; a member of the Washington State Medical Association; formerly a member of the faculty of his alma mater and a member of the staff of the St. Louis City Hospital; died at his home in Tacoma, September 27, from locomotor ataxia, aged 56.

Benjamin Moody, M.D. Geneva (N. Y.) Medical College, 1868; Jefferson Medical College, 1869; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War and for several years a school director of Mansfield; died at his home in that place, September 22, from nephritis, aged 69.

William Edwin Bonawitz, M.D. College of Physicians and Surgeons, Baltimore, Md., 1889; of Millerstown, Pa.; a member of the Medical Society of the State of Pennsylvania; died in Johns Hopkins Hospital, Baltimore, October 2, a few hours after an operation for the removal of gall-stones, aged 45.

Orrin Davis, M.D. Eclectic Medical Institute, Cincinnati, 1846; said to have been the oldest alumnus of that institution; for fifty years a practitioner of Attica, N. Y., and a professor in various eclectic medical colleges; died at his home in Sawtelle, Cal., September 27, aged 88.

Joseph Hervey Reynolds, M.D. Bellevue Hospital Medical College, 1864; a member of the American Medical Association; one of the oldest residents of Allegheny County, Pa.; a member of the staff of the Presbyterian Hospital, Bellevue; died at his home in that city, September 28, aged 89.

Arthur H. Thompson, M.D. New York Homeopathic College, New York City, 1861; the oldest practitioner of Lapeer, Mich.; four times mayor of the city and president of the local U. S. pension examining board; died at his home, September 26, from cerebral hemorrhage, aged 73.

Calvin Knox Smith, M.D. Rush Medical College, 1876; of Fort Washakie, Wyo.; a member of the American Medical Association; physician at the Shoshone Indian Reservation for twenty-five years; died at his home, October 1, from valvular heart disease, aged 57.

Henry Spring Strickland, M.D. College of Physicians and Surgeons, New York City, 1877; of Olympia, Wash.; a member of the Washington State Medical Association; died at the Minor Hospital, Seattle, September 23, from malignant disease, aged 58.

John W. Medaris, M.D. Willoughby (O.) University, 1845; (license, Indiana, 1897) a member of the Indiana State Medical Association; for fifty-three years a practitioner of Brookston; died at his home, September 21, aged 97.

E. C. Adams, M.D. Hahnemann Medical College, Philadelphia, 1886; of Duluth; formerly of Minneapolis; died in Duluth, April 7, from the effects of poison believed to have been self-administered with suicidal intent, aged 55.

Gilbert Gaudreau, M.D. Medical School of Maine, Brunswick, 1889; secretary of the Augusta (Me.) Board of Health; died at his home in that city, September 25, after an operation for appendicitis, aged 57.

Jesse Linnord Sammons, M.D. Starling Medical College, Ohio, 1885; a member of the American Medical Association; died at his home in Calis, W. Va., September 30, from cerebral hemorrhage, aged 52.

Camillo H. Machinek, M.D. Howard University, Washington, D. C., 1892; a member of the Medical Association of the District of Columbia; died in his apartments in Washington, October 3, aged 40.

Clarence L. Nichols, M.D. Hahnemann Medical College, Philadelphia, 1885; a specialist on diseases of the eye and ear; died at his home in Portland, Ore., September 26, from anemia, aged 50.

Eugene P. Lanthurn, M.D. Pulte Medical College, Cincinnati, 1882; of Stockton, Cal.; died in the San Joaquin County Hospital in that city, September 28, from tuberculosis, aged 53.

Sherman B. Hitt, M.D. Medical College of Ohio, Cincinnati, 1886; health officer of Greensburg, Ind.; died at his home in that city, September 26, from angina pectoris.

Davis Jefferson Foster, M.D. University of Nashville, Tenn., 1859; a Confederate veteran; died at his home in Paducah, Ky., October 1, from senile debility, aged 80.

Alexander M. Shields, M.D. University of Louisville, Ky., 1883; of Chaplin, Ky.; was shot and instantly killed in an affray at Chaplin, September 29, aged 56.

Andrew A. Allison, M.D. University of Tennessee, Nashville, 1888; of Edna, Tex.; died in a sanitarium in Houston, Tex., September 12, aged about 50.

John H. Walker, M.D. Miami Medical College, Cincinnati, 1868; died at his home in Oak Ridge, Mo., September 29, from heart disease, aged 71.

James E. Mahoney (license, Wisconsin, 1904), a practitioner since 1898; died at his home in Milwaukee, September 27, from heart disease, aged 45.

Isaac L. Kip, M.D. New York University, New York City, 1854; died at his home in New York City, October 6, from senile debility, aged 81.

Joseph Blakie Bishop, M.D. Washington University, St. Louis, 1866; died at his home in Athens, Tex., April 4, aged 73.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

CALCIUM PHENOLSULPHONATE (SULPHOCARBOLATE)

Report of the Council on Pharmacy and Chemistry

A subcommittee of the Council submitted this report:

The Council having voted to consider the eligibility of calcium phenolsulphonate (calcium sulphocarbolate) for inclusion with New and Nonofficial Remedies, the product as it is found on the market was examined in the chemical laboratory of the American Medical Association, with a view of establishing standards for this substance. The laboratory now submits its findings in the matter which show that, largely as a result of its efforts, a product of satisfactory quality is now on the market.

The phenolsulphonates (sulphocarbolates) are, probably, not very valuable as therapeutic agents. Calcium phenolsulphonate has little to recommend it over the official sodium phenolsulphonate, and it may be held as an unnecessary duplication of an official substance; yet its provisional inclusion in New and Nonofficial Remedies is recommended since it contains two radicals (the calcium and the phenolsulphonic) often given in certain conditions, and it may for that reason be found to have some advantage over sodium phenolsulphonate. Further, if the product be described in New and Nonofficial Remedies and standards of purity for it provided, this will have the effect of improving the quality of the product on the market.

It is recommended, therefore, that calcium phenolsulphonate (calcium sulphocarbolate), with the description herewith submitted, be accepted as a non-proprietary article, and that the products of the Abbott Alkaloidal Co. and of the Mallinckrodt Chemical Works be listed.

In order that physicians may appreciate the work of the Association's chemical laboratory and recognize the influence which it exerts on the improvement of the quality of medicines, it is recommended that publication of this report and of the report of the chemical laboratory be authorized.

This report was adopted and in accordance therewith the description of calcium phenolsulphonate appears on another page of this issue and the report of the chemical laboratory is published below.

W. A. PUCKNER, Secretary.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

CALCIUM PHENOLSULPHONATE

W. A. Puckner and L. E. Warren

The examination of calcium phenolsulphonate (calcium sulphocarbolate) was taken up at the request of the Council. Tentative standards for the substance were prepared and after the examination of the specimens had been completed, these standards were submitted for criticism to several manufacturers of chemicals. At the same time the findings (for each manufacturer's product) which were not in accord with the proposed standards were submitted to the manufacturers interested.

The product was examined with reference to the residue on ignition, loss on drying at 100 C., freedom from arsenic and heavy metals, sulphates and uncombined phenol. Some of the specimens studied were purchased on the open market while others were furnished by the manufacturers. The tests for purity to which the product was subjected are as follows:

TESTS

An aqueous solution of the salt (1-100) should not respond to the time-limit test for *heavy metals* prescribed by the United States Pharmacopeia, 8th Revision.

An aqueous solution of the salt (1-100) acidified with a few drops of diluted hydrochloric acid should give no immediate turbidity after the addition of 1 c.c. of barium chlorid test solution (limit of *sulphate*).

If 5 gm. of the salt be percolated with 25 c.c. of ether in a small filter, the solvent allowed to evaporate spontaneously and the residue, if any, dissolved in 5 c.c. of water, the solution should not give a white precipitate on the addition of a few drops of bromin test solution (absence of *phenol*).

If dried at 100 C. (212 F.) for 1 hour the salt should not lose more than 2 per cent. of its weight (absence of an undue amount of *water*).

If from 0.5 to 1 gm. of the salt be dried to constant weight at 100 C. (212 F.) and the dried substance be slowly ignited in an uncovered crucible (care being taken that the contents be freely exposed to the air) until the weight becomes constant, the residue should amount to not less than 35.0 per cent., nor more than 36.0 per cent. of the weight of the dried substance.

The results of the examination[1] are tabulated below.

These results show that commercial calcium phenolsulphonate varies somewhat in purity and uniformity of composition. The formula commonly assigned to the salt in most text-books of pharmaceutical chemistry is $Ca(C_6H_5O_4S)_2+H_2O$. Theoretically such a salt should contain 4.45 per cent. of water and should yield 33.68 per cent. of residue on ignition. The above formula is given in Merck's Index (1907), yet the market product bearing the label of this firm was found to contain only 0.45 per cent. water and was therefore, not the monohydrated salt indicated by the formula.

The results of our examination were then transmitted to the firms whose products had been examined.

The Mallinckrodt Chemical Works, in replying, wrote that its manufacturing department was experimenting in an attempt to produce a phenol-free salt at moderate cost. Some time later a specimen of this firm's latest product was sent to the laboratory for examination. This specimen lost 0.44 per cent. of its weight on drying and the dried material yielded 35.24 per cent. of residue on ignition, results that were well within the limits suggested in the standards proposed. The specimen did not respond to the bromin-water test for phenols and both in color and odor was superior to the first specimen of this firm's that was examined.

The Abbott Alkaloidal Co., in submitting its brand of calcium phenolsulphonate, gave the same formula to indicate the composition of its product as is found in Merck's Index, namely, $Ca(C_6H_5O_4S)_2+H_2O$. When the specimen was dried at 100 C., however, it lost about 15 per cent. of its weight, showing that it had a much larger water-content than was claimed by the manufacturer. This result was verified also by the amount of residue found on ignition, which amounted to 30 per cent. of the weight of the undried specimen instead of 33.68 per cent. as is required by the formula of the salt containing 1 molecule of water. These laboratory findings

1. The details of the analysis will be sent on receipt of a stamped envelope; they will also be published in the Annual Report of the chemical laboratory.

Brand.	Water (Loss at 100 C.).	Residue on Ignition (Calculated from Dried Specimen).	Color.	Odor.	Phenol Test.
M. C. W.[2]	0.42	35.18	Noticeably pinkish	Somewhat phenol-like	Distinct precipitation.
M. & Co.[3]	0.45	35.28	Very faintly pinkish	Distinctly phenol-like	Distinct precipitation.
A. A. Co.[4]	15.13	35.24	Faintly yellowish	Distinctly acetone-like	None.
P. W. R.[5]	0.41	35.42	Faintly pinkisa	Odorless	Distinct precipitation.

2. M. C. W. = Mallinckrodt Chemical Works.
3. M. & Co. = Merck & Company.
4. A. A. Co. = Abbott Alkaloidal Company.
5. P. W. R. = Powers-Weightman-Rosengarten Company.

were sent to the firm. No acknowledgment was received for nearly six months and then the company wrote questioning the chemists' results and asserting that its product contained "about 4.5 per cent." (theoretically 4.45 per cent.) of water instead of the 15.1 per cent. as had been reported by us. This, of course, was a reiteration of the claim made at the time the product was submitted to the Council. In its letter, the company stated that it was sending another sample of calcium phenolsulphonate for further experimentation. This specimen lost 1.93 per cent. of its weight on drying and the dried material gave 35.15 per cent. of ash on ignition; it did not respond to the bromin-water test for phenol. These later results indicated that, although the firm was ignorant of the composition of its own product, the second specimen complied with the proposed standard.

As the table shows, the products of Merck and Powers-Weightman-Rosengarten were both found to contain free phenol. These firms were advised of the laboratory's findings, but, beyond acknowledging the letters that were sent, they have taken no further action.

The results of the examination of calcium phenol-sulphonate illustrate what other examinations in the Association laboratory have so often shown, viz., that commercial products which are but little used and for which there are no authoritative standards for strength and purity, are also invariably unreliable in composition.

CONVICTIONS UNDER FOOD AND DRUGS ACT

In spite of the handicaps to which the Bureau of Chemistry has been subjected by the enemies of the pure food law both within and without the Department of Agriculture, many vicious frauds both in foods and drugs have been exposed and their perpetrators punished. The records of these cases are published by the Department of Agriculture in a series of leaflets known as "Notices of Judgment." Unfortunately these publications, like most government documents, do not reach the general public although they may be had for the asking. Recognizing this fact, THE JOURNAL has at different times abstracted the information given in the Notices of Judgment in an attempt to popularize this important work. The matter thus published has been reprinted both in pamphlet form[1] and in "Nostrums and Quackery"[2] making it available for public distribution.

Unfortunately not all the details that have been brought out in the various government investigations appear in these Notices of Judgment. When they were first issued, the information given was much more complete, but as Solicitor McCabe's influence gradually overshadowed the Bureau of Chemistry the data published by the government in the Notices of Judgment became more meager until only the barest facts now appear in these publications. As will be remembered, at the investigation recently made of the Bureau of Chemistry, it was shown that McCabe not only "edited" the various Notices of Judgment before publication but, in at least one case, falsified the record apparently to avoid hurting the feelings of those food manufacturers that find it necessary to use benzoate of soda in their products! This week we publish brief abstracts of a few more cases of interest not only to physicians but also to the public.

MUNYON'S REMEDY

Every reader of newspapers knows of Munyon—of the pompadour and uplifted finger. For years this quack has been humbugging the public but Nemesis in the form of the Bureau of Chemistry finally overtook him. Some time ago Munyon's Homeopathic Home Remedy Company shipped at different times two consignments of its nostrums. The first consignment was labeled "Munyon's Asthma Cure," which was said to "permanently cure asthma." The government chemists analyzed this "cure" and found it to consist of sugar and alcohol. The second consignment contained two preparations one of which was labeled "Munyon's Special Liquid Blood Cure, Price $2.00." Some of the claims made for this nostrum were:

"Eradicates Syphilis and Scrofula from the Blood, and acts as a tonic to the general system.

"It cures enlarged tonsils or glands, ulcers and all forms of sores and eruptions.

"It cures Syphilitic Diseases of the Bones, syphilitic ulcers, syphilitic and scrofulitic skin diseases, removes all impurities from the blood, and tones up the whole system."

This was analyzed in the Bureau of Chemistry and found to contain a trace of corrosive sublimate, the balance being about equal parts of potassium iodid and milk sugar.

The other preparation in the same consignment with "Munyon's Special Liquid Blood Cure" was "Munyon's Blood Cure." The claims for the latter were:

"Munyon's Blood Cure will positively cure all forms of Scrofula, Erysipelas, Salt Rheum, Eczema, Pimples, Syphilitic Affections, Mercurial Taints, Blotches, Liver Spots, Tetter and all skin diseases."

It would also do several other things—according to Munyon. Analyzed by the government chemists this marvelous remedy was found to consist of sugar! All of these preparations were declared misbranded because of the false therapeutic claims made for them, for at the time this case was before the courts the Supreme Court had not emasculated the Food and Drugs Act. In other words, Munyon was charged with lying about his sugar pills and similar nostrums. He pleaded guilty and was fined $200 in each of the three cases.—[*Notice of Judgment, No. 874.*]

QUININ WHISKEY

The Quinin Whiskey Company, Louisville, Ky., shipped in interstate commerce some of its product "Quinin Whiskey." In addition to claiming certain medicinal properties for this preparation, the label bore the following statement:

"Alcoholic strength 85 per cent. Quinin 1¼ grains per ounce. Guaranteed under the Food and Drugs Act," etc.

Analyzed by the chemists at Washington, it was found to contain only 42 per cent. of alcohol instead of 85 as stated on the label and instead of having 1¼ grains of quinin to the ounce it contained only 1/75 of a grain. Naturally the stuff was declared misbranded. The defendant pleaded guilty and was fined $25 and costs.—[*Notice of Judgment, No. 885.*]

INDIAN TAR BALSAM

John B. Hurtt and Thomas D. Hurtt of Baltimore, who did business under the name Indian Tar Balsam Company, shipped some of their product into the District of Columbia. It was said to be:

"The never failing remedy for the cure of coughs, colds, sore throat, and all kinds of throat and lung affections."

When analyzed, it was found to consist of about 60 per cent. of oil and 40 per cent. of water, the oil floating and being partly volatile, with an odor of tar, and the water containing morphin derivatives. As the labels bore no statement regarding the quantity or presence of morphin or its derivatives and as the claims for its curative properties were false and misleading, the stuff was declared misbranded. The defendants pleaded guilty and were fined $25. [*Notice of Judgment, No. 898.*]

STANGE'S GENUINE ANTISPASMODIC OR CRAMP DROPS

This nostrum was made by E. J. and Minnie Abel of Chicago and the labels purported that the article was a cure for spasms, cramps, vertigo, pressure on the heart and other things. Analysis showed it to contain alcohol, ether and oil of peppermint. As such a mixture would not cure the various disorders mentioned on the label and as no statement regarding the amount of alcohol and ether appeared on the bottle the

1. The pamphlet, "Convictions Under the Food and Drugs Act," is sold at 6 cents the copy.
2. "Nostrums and Quackery," press of the American Medical Association, price $1.00

nostrum was declared misbranded. The Abels pleaded guilty and were fined $25 and costs.—[*Notice of Judgment, No. 903.*]

BRADBURY'S CAPI-CURA

Bradbury's Capi-Cura was a so-called headache cure sold by James J. Cramer who did business as the Cramer Drug Company of Boston. The preparation was of the usual acetanilid type but contained no statement on the label indicating the presence of this dangerous drug. It was therefore declared misbranded and on Cramer's pleading guilty a fine of $25 was imposed.—[*Notice of Judgment, No. 906.*]

SEPTICIDE

Septicide was an impudent fraud made in Milwaukee and sold as a cure for practically everything from "cancer" to "chapped hands," and from "suppressed menstruation" to "sweaty feet." It was a nostrum of the typical "cure all" type. When analyzed by the government chemists it was found to consist of water with small quantities of sulphur dioxid and sulphuric acid and a trace of nitrates. As Dr. Wiley's assistants got after this vicious fraud before the Supreme Court decision crippled the pure food law, it was possible to convict the Septicide Company of misbranding. Orange Williams, secretary and treasurer of the concern, pleaded guilty to the falsehood and the court imposed a fine of $10.—[*Notice of Judgment, No. 907.*]

NYAL'S HEADACHE WAFERS

This is another nostrum of Frederick Stearns & Co. of Detroit. Each of these "headache wafers" contains 4 grains of acetanilid and 1 grain of caffein alkaloid. In spite of the presence of these powerful drugs, the label stated:

"It does not produce any bad after effects nor does the system become habituated to its use so as to produce a noxious drug habit."

The stuff was declared misbranded first, because the word Nyal was fictitious; second, in that it was not a cure for headache; third, because it would produce bad after effects, and fourth, because it would also produce a noxious drug habit. Wayland Stearns, second vice-president of Frederick Stearns & Co., entered a plea of nolo contendere and was fined $2.—[*Notice of Judgment, No. 908.*]

INFALLIBLE HEADACHE TABLET

This was another acetanilid product and was made by the Infallible Headache Co., Columbia Cross Roads, Pa. It was said to be an infallible cure for a number of conditions for which it was not a cure and it was further claimed "neither will they cause heart failure." On both counts they were declared misbranded. The defendant pleaded guilty and paid a fine of $25 and costs.—[*Notice of Judgment, No. 919.*]

(*To be continued*)

Correspondence

A Conjecture Respecting the Cause of Beriberi

To the Editor:—I was much interested in reading the article commenting on beriberi in THE JOURNAL (Oct. 7, 1911, p. 1213). I am sorry to say that I cannot agree with the theory of beriberi being caused only by white milled rice. Beriberi is, of course, a true neuritis, and phosphorus is certainly removed in taking away the outer layer of the rice paddy, but my experience was that when proper precaution was taken in harvesting and caring for the rice after harvest —storing it in a dry place—that there was very little or no beriberi. Witness the Danish captain in the Siamese navy who personally told me that he had never had a case of beriberi on board his ship in seventeen years' service, and who personally bought the best rice and was careful as to its storage in a dry place; also the fact that beriberi usually is epidemic in the far East in jails, asylums, tin mines and barracks, where proper care is not taken in storing the rice in a dry place. My own experience covers many thousands of cases and on investigation I always found that the rice-supply had been stored in a wet or damp place. Among the best Siamese families, who live largely on a rice diet, beriberi was almost unknown, but their servants living in the basements of their palaces, where rice was stored in a damp place, suffered greatly from the disease. Also, beriberi is far more prevalent after a very wet rainy season when the cultivators have had trouble during and after harvest to keep their rice dry. This was shown at Chiemgmai, in the north of Siam, several years ago, where, after the wettest season in twenty years, there was an epidemic of beriberi and hundreds of people died of the disease. Now, these people in the far North do not use the white milled rice but the rice husked in their crude pounding mortars which retain almost all of the outer layers of the paddy, and yet they contracted the disease by taking the rice which is supposed to prevent it and which contains the phosphorus needed. Also, on the side of the river where the ground was higher and the floods less, there was very little of the disease, but on the side where the floods were great the disease raged fiercely.

I simply submit my observations which covered five years of time and many thousands of cases.

CHARLES S. BRADDOCK, New York.
Late Chief Medical Inspector Royal Siamese Government.

The Treatment of Rhus Poisoning

To the Editor:—I wish to report on a treatment for ivy poisoning used with success on three persons, two patients and myself. Since boyhood, I have been subjected to at least yearly poisoning from ivy, sometimes most severely, and naturally I tried all the "sure cures" of the laity and, after studying medicine, all the treatments found in medical literature.

Last August, however, I tried, as a palliative measure to allay the itching and irritation, a standard commercial solution of formaldehyd as put up in pound bottles, and obtained immediate and lasting relief. The first application, made in the morning, to the hands and arms, caused no pain; the second application, made in the afternoon, to the scrotum, caused intense pain which disappeared, however, after cold applications for ten or fifteen minutes. A patient whose eyelids were involved was relieved after one application. To keep the solution from the conjunctiva and cornea, petrolatum was placed on the free border of the lids, among and ⅛ inch beyond the cilia. After the solution was applied and had become dry, petrolatum was applied all over the eyelids, to prevent formaldehyd vapors getting into the eye. Wet cotton pledgets were placed in each vestibule; a wet towel was used to keep the fumes from the mouth. In another patient, whose hands and side of face, including the external ear and canal, were involved, there was no pain from the treatment to hands and face but there was considerable pain from the application to the ear. This, however, passed off and no other treatment was necessary. It occurred to me afterward that a weaker solution would have been just as effective to the scrotum and external canal of ear. After five or six days I used hydrogen peroxid to the parts painted, which removed the dry and somewhat discolored skin, leaving a perfectly smooth surface.

C. E. PURCELL, M.D., Paducah, Ky.

Maggots in the Ear

To the Editor:—With reference to a report on "Screw Worms in the Ear" (THE JOURNAL A. M. A., Oct. 7, 1911, p. 1207), I wish to report the following: A patient showed me a maggot which, he said, had crawled out of his left ear during the night; he also complained of sleeplessness for the two preceding nights on account of pain in his ear. I discovered a white, wriggling mass behind the isthmus of the external canal. After several unsuccessful attempts to remove this mass by various methods, I resorted to a 4 per cent. solution of cocain, which removed eight maggots, making a total of nine from one ear. The entire canal and membrana tympani were severely inflamed. Recovery was uneventful.

JOHN A. HUTH, M.D., Natrona, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INDICAN IN THE URINE

1. *To the Editor:*—Please give reference to an authoritative work on the presence of indican in the urine, its cause and the diet necessary for its elimination. W. FLITCROFT, Paterson, N. J.

2. *To the Editor:*—Please describe a method for the quantitative estimation of indican in the urine. L. W. HOWE, Coldwater, Mich.

ANSWER.—1. We do not know of any work treating this subject specially. It is discussed in books on clinical diagnosis and on physiologic chemistry.

2. There is no very good method for the determination of the amount of indican in urine. A colorimetric method is sometimes used, in which the indican is set free and converted into indigo by the action of an oxidizing agent, such as calcium hypochlorite (chlorid of lime), or Obermayer's reagent, which consists of a 0.2 per cent. solution of ferric chlorid in concentrated hydrochloric acid. The coloring matter thus produced is extracted by chloroform and the color of the chloroform extract compared with a standard blue color, such as indigo or Fehling's solution. The following approximative method has been recommended: To a hundredth part of the whole day's excretion add an equal volume of Obermayer's reagent and 5 c.c. of chloroform. Shake a minute or more and allow to settle. Compare the color with that of a strong Fehling's solution, taken as 100, as a standard.

WASSERMANN REACTION

To the Editor:—1. To what extent is the Wassermann reaction positive in locomotor ataxia?

2. How does this percentage compare with that of the reaction in undoubted syphilitic disease? HENRY POWER, Spokane, Wash.

ANSWER.—1. It is impossible to give a definite answer to this question. It will probably vary from 65 to 90 per cent., taking the various workers the world over. The reaction in locomotor ataxia is less frequently positive than in secondary untreated syphilis or in cases which present demonstrable syphilitic lesions of the nervous system.

2. In very early syphilis, the primary stage, the Wassermann reaction is low—perhaps 60 per cent. In marked secondary untreated syphilis the reaction is high—practically 100 per cent. In late nervous syphilis, paresis and syphilitic brain disease the percentage is high—90 to 100 per cent. In locomotor ataxia as named above. In late syphilis of the bones, gummatous degeneration of the skin, etc., the reaction again is low—50 to 60 per cent. The location of the lesion, the duration of the disease, and especially whether it has been or is being treated, may modify the reaction, either positively or negatively.

NO MORE COPIES OF REPORT OF CHICAGO VICE COMMISSION

To the Editor:—Can you tell how I may secure a copy of the report of the Chicago Vice Commission to which you have referred several times in THE JOURNAL? L. A.

ANSWER.—In our review of this book (June 10, 1911, page 1743) we gave the street address of the commission. The chairman of the commission recently wrote us: "The edition of the report is exhausted and there are no more copies for distribution. The commission has completed its labor and has gone out of existence."

PYROLIGNEOUS ACID AND RHEUMATISM

To the Editor:—Please state whether or not pyroligneous acid is of any therapeutic value in the treatment of rheumatism, gout and neuritis, and if so the dosage, method of administration, etc.
V. D. WASHBURN, Wilmington, Del.

ANSWER.—Pyroligneous acid is simply a crude wood-vinegar containing about 6 per cent. of acetic acid and presumably would have as much value as a therapeutic agent as acetic acid or vinegar.

PLANS WANTED FOR COMBINED RESIDENCE AND OFFICE

To the Editor:—I am proposing to build a combined residence and office. On looking for a book of plans that would be suggestive I fail to discover any such book, and I have not been able to get in touch with any published plans that bear on this class of buildings. Certainly many physicians have put up such houses and it is barely possible that some of your many readers may be able to give me some hints. H. M. FERGUSON, Morris, Ill.

SALVARSAN ACCIDENTS

To the Editor:—Kindly give me references to reports of deaths from the intravenous injection of salvarsan.
EDWIN WALKER, Evansville, Ind.

ANSWER.—The following are references to fatal cases or cases accompanied by alarming symptoms:

Finger, E.: By-Effects of Salvarsan, *Berl. klin. Wchnschr.*, May 1, 1911; abstr. in THE JOURNAL, June 10, 1911, p. 1765.

Martius, K.: Fatalities After Injection of Salvarsan in Cardiovascular Disease, *München. med. Wchnschr.*, May 16, 1911; abstr. in THE JOURNAL, June 24, 1911, p. 1909.

Loven: Mishaps with Intravenous Salvarsan Injections, *Med. Klinik*, May 28, 1911; abstr. in THE JOURNAL, July 1, 1911, p. 54.

Mann, C.: Salvarsan Accident, *München. med. Wchnschr.*, Aug. 1, 1911; abstr. in THE JOURNAL, Sept. 9, 1911, p. 935.

Fischer, B.: Case of Fatal Hemorrhagic Encephalitis Following Injection of Salvarsan, *München. med. Wchnschr.*, Aug. 22, 1911; abstr. in THE JOURNAL, Sept. 30, 1911, p. 1171.

Kannengiesser: Fatality Following Injection of Salvarsan, *München. med. Wchnschr.*, Aug. 22, 1911; abstr. in THE JOURNAL, Sept. 30, 1911, p. 1171.

Hoffmann, A.: Jaundice with Fatal Outcome After Salvarsan Treatment, *München. med. Wchnschr.*, Aug. 15, 1911.

PAPER-BAG COOKERY

To the Editor:—Please give information about paper-bag cookery and where particulars concerning it may be obtained. L. H. K.

ANSWER.—It is asserted that by this method of cooking many articles, such as meats, fish, poultry, birds, many vegetables, fruits, cereals, pies, cake and other desserts and even soup, may be cooked in paper bags, with the advantage of retaining all the flavors of the foods, and with no subsequent labor in washing the cooking utensils. The present method seems to have been developed by Nicolas Soyer, a chef of London, whose exposition of the method, together with recipes for preparing many dishes, is contained in a small book published in England and obtainable through book-dealers in this country at 60 cents. Any bag may be used, but the food is apt to taste of the paper, so bags of specially prepared paper have been made.

CARBON DIOXID IN KELOIDS

To the Editor:—Can you inform me, through your Queries and Minor Notes column, as to the value of carbon dioxid crayons in the removal of keloids? Are the keloids any less apt to return following their removal by this method than after their removal by the knife? C. C. H.

ANSWER.—Hoffman and others have had good results in keloid from freezing with solid carbon dioxid, but the method has not had enough trial to be certain of the ultimate results. Pusey, who cites Hoffman (*Jour. Cutan. Dis.*, July, 1910) does not believe the results from solid carbon dioxid are likely to be as good as those obtained from *x*-rays. Removal of keloids by excision is as a rule unsuccessful and is not advisable; they return larger than before.

OLEOZONE — SEROTHERAPY OF TYPHOID

To the Editor:—We have a doctor here who is claiming to cure pulmonary tuberculosis. His treatment consists of the use of Ozonoid tablets put up by C. S. Roberts, New York City. Please give me any information you can regarding these tablets.

2. Please give me the latest literature on the serum and vaccine treatment of typhoid fever.
J. W. LINDLEY, M.D., Natoma, Kan.

ANSWER.—1. Ozonoid tablets is one more name for a much-christened fake to which THE JOURNAL has given a good deal of space. Its first name was Hydrocine. When analyzed in the Association's laboratory, the chemists reported that they found that "each 29.5 gr. Hydrocine tablet contains 28 gr. of cane sugar, small quantities of volatile oils and a trace of pancreatin." The stuff originated, it seems, with one C. E. Getsinger, who organized what was known as the Medical Food Company. The commercial possibilities in selling an odoriferous sugar-mixture as a "consumption cure" apparently appealed to one Charles S. Roberts, a physician of Syracuse, N. Y., who, with the help of Charles H. Goddard, and others, incorporated the Hydrocine Company for the purpose of exploiting Getsinger's "treatment." Goddard, it will be remembered, was the man who organized that cooperative "patent-medicine" concern known as the A. D. S.—the American Druggists Syndicate—of which Roberts was one of the officers. Getsinger and Roberts later seemed to have had a disagreement and the former marketed his own product under the name of Oxydase. Roberts changed the name of Hydrocine to Oleozone and apparently had the stuff made by the A. D. S.

—at least it bore the same serial number as that given the A. D. S. products. Coincident with these changes in the name, another concern came into existence—the Cowles Institute, said to be operated by one H. L. Cowles. This also dispensed "oxygenated products" for the cure of consumption. A little later Cowles seems to have changed the name of his concern to the Hemavitæ Company and to have rechristened his product Hemavitæ.

The latest change in the name of Getsinger's product is Oxidaze, put out by the American Oxidaze Company. This company claims to have purchased the formula of Getsinger, who is no longer connected with the business. The concern is, we understand, controlled by a group of business men, although one of the individuals connected with it—Eugene Howard—is said to be a physician. Roberts, apparently, is still selling the stuff under the name Oleozone. In a revised price-list, sent out by Roberts a few days ago, he notifies the users of his nostrum that the price of Oleozone has gone up. As he puts it: "Increase in the cost of some of its basic constituents has made necessary a slight advance in the price of Oleozone." Thus, it appears that housewives are not the only sufferers from the increased cost of sugar.

2. The following references on the serum treatment of typhoid fever may prove of value:

Kean, J. R.: The Sanitary Record of the Maneuver Division, THE JOURNAL, Aug. 26, 1911, p. 713.

A Triumph of Preventive Medicine, Editorial, THE JOURNAL, Aug. 26, 1911, p. 744.

Russell, F. F.: Antityphoid Vaccination in the American Army, *Jour. Am. Public Health Assn.*, July, 1911; abstr. in THE JOURNAL, Aug. 26, 1911, p. 767.

Bass, C. C.: Antityphoid Vaccination; abstr. in THE JOURNAL, July 8, 1911, p. 154.

The Present Status of Antityphoid Vaccination, Editorial, THE JOURNAL, June 24, 1911, p. 1884.

Gaillson, J. G.: Vaccine Treatment of Typhoid, *Med. Rec.*, June 17, 1911; abstr. in THE JOURNAL, July 8, 1911, p. 107.

Courmont, J., and Rochaix, A.: Vaccination by Way of the Intestines Against Typhoid, *Presse méd.*, June 3, 1911; abstr. in THE JOURNAL, July 8, 1911, p. 172.

Lambert, A.: Typhoid and Its Prevention by Vaccination, THE JOURNAL, June 3, 1911, p. 1679.

Meakins, J. C., and Foster, L. S.: Treatment of Typhoid by Vaccines, *Canad. Med. Assn. Jour.*, June, 1911; abstr. in THE JOURNAL, July 15, 1911, p. 250.

Vaccination Against Typhoid Fever, THE JOURNAL, May 20, 1911, p. 1460.

Watters, W. H., and Eaton, C. A.: Vaccine Therapy of Typhoid, *Med. Rec.*, May 6, 1911; abstr. in THE JOURNAL, May 27, 1911, p. 1613.

Fletcher, J. P.: A Safe and Rapid Method for the Administration of Antityphoid Vaccine, THE JOURNAL, April 8, 1911, p. 1016.

Vincent, H.: Vaccination Against Typhoid, *Bull. Acad. de méd.*, Paris, Jan. 24, 1911; abstr. in THE JOURNAL, March 11, 1911, p. 781.

Roget, A., and Ragriffoul: Serotherapy of Typhoid Fever, *Presse méd.*, Dec. 24, 1910; abstr. in THE JOURNAL, Jan. 28, 1911, p. 308.

Anders, J. M.: The Use of Typhoid Vaccines in Typhoid Fever, THE JOURNAL, Dec. 10, 1910, p. 2023.

Foster, G. B., Jr.: Antityphoid Vaccination, THE JOURNAL, Nov. 19, 1910, p. 1808.

Hollis, A. W.: Treatment of Typhoid with Vaccine, *Med. Rec.*, N. Y., Oct. 8, 1910; abstr. in THE JOURNAL, Oct. 22, 1910, p. 1498.

Gosman, G. H. R.: The Present Status of Antityphoid Inoculation, THE JOURNAL, Oct. 1, 1910, p. 1169.

Semple, D.: Hypodermic and Intramuscular Inoculation of Bacterial Vaccines as Demonstrated by Experiments with Typhoid Vaccine, *Lancet*, London, June 25, 1910; abstr. in THE JOURNAL, July 23, 1910, p. 354.

Hartsock, F. M.: Antityphoid Vaccination, Result of 1,100 Inoculations, THE JOURNAL, June 25, 1910, p. 2123.

Sappington, S. W.: Typhoid Vaccines and Opsonins, *Jour. Med. Research*, June, 1910; abstr. in THE JOURNAL, July 23, 1910, p. 351.

Vincent, H.: Vaccination of Man Against Typhoid Fever, *Bull. Acad. de méd.*, Paris, June 21, 1910; see Paris Letter in THE JOURNAL, July 9, 1910, p. 138.

Richardson, M. W.: Vaccine Therapy in Typhoid; abstr. in THE JOURNAL, June 4, 1910, p. 1892.

Russell, F. F.: Antityphoid Vaccination the Immediate Results of the Administration of 3,000 Doses, *Bull. Johns Hopkins Hosp.*, March, 1910; abstr. in THE JOURNAL, April 16, 1910, p. 1337.

Herz, A.: Serotherapy of Typhoid and Its Influence on Agglutination, *Wien. klin. Wchnschr.*, Dec. 16, 1909; abstr. in THE JOURNAL, Jan. 22, 1910, p. 332.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Oct. 14, 1911.

Chase, C. L., M.R.C., relieved from duty at Fort Oglethorpe and ordered to Fort Dade, Fla., for duty.

Whaley, A. M., captain, arrived at Fort Monroe, Va., for duty.

Reddy, J. J., lieut., left Fort Jay for temporary duty at Fort Wood during absence of Lieutenant Pascoe.

Stone, F. P., D.D.S., ordered to visit certain posts in Department of Gulf from Oct. 15, 1911, to July 1, 1912. (S. O. 31, Oct. 1, 1911, E. D.)

Hart, W. L., on arrival at San Francisco from the Philippine Islands will proceed to Fort Sam Houston, Texas, for duty.

Clayton, G. R., M.R.C., reports his departure from Fort Sheridan, Ill., on leave of absence for one month and ten days.

Mount, J. R., M.R.C., arrived at San Francisco en route to Schofield Barracks, H. T.

Duncan, W. A., captain, reports return to medical supply depot Washington, D. C., from leave of absence.

Eastman, William R., captain, left medical supply depot, New York, for Fort Riley, Kan., for duty.

Shockley, M. A. W., major, on arrival at San Francisco will proceed to Fort Niagara, N. Y., for duty.

Webber, H. A., major, on being relieved by Major Shockley will proceed to Fort Logan H. Roots, Ark., for duty.

Feely, J. F., A.D.S., ordered to Fort Slocum, N. Y., for duty.

Sherwood, Charles E., A.D.S., ordered to Columbus Barracks, Ohio, for duty.

Siler, J. F., captain, relieved from duty at medical supply depot, New York, about Nov. 5, 1911, and ordered to Fort Sam Houston, Texas, for duty.

Thomason, H. D., captain, will proceed to Trenton, N. J., about Oct. 17, 1911, in connection with the reorganization of the militia of New Jersey.

Webber, H. A., major, granted leave of absence for one month, about Oct. 14, 1911.

Bowen, A. S., lieut., arrived at Fort Snelling, Minn., from San Antonio.

Wolven, F. H., D.S., arrived at Vancouver Barracks from Fort Liscum, Alaska.

Boak, S. D., D.S., reports his arrival at West Point, N. Y., from leave of absence.

Woodbury, J. H., major, left Fort Screven on detached service at Atlanta.

Mason, G. L., D.S., left Fort Snelling for Fort Omaha, Neb.

Mann, L. M., colonel, returned to his station, Chicago, from leave of absence.

Medical Corps, U. S. Navy

Changes during the week ended Oct. 14, 1911.

Stitt, E. R., surgeon, detached from the bureau of medicine and surgery, navy department, and ordered to duty at the naval medical school, Washington, D. C.

Riggs, C. E., surgeon, detached from the naval academy and ordered to the *Wabash*.

Evans, S. G., surgeon, ordered to the naval academy.

Gill, J. E. P. A. surgeon, detached from the *Wabash* and ordered to the *Des Moines*.

Hough, F. P. W., P. A. surgeon, detached from the *Des Moines* and ordered home to await orders.

Wheeler, W. M., surgeon, ordered to the naval hospital, Washington, D. C., for treatment.

Brownell, C. DeW., surgeon, ordered to duty as senior medical officer at the navy-yard, Portsmouth, N. H., and to additional duty in command of the naval hospital at that place.

Beeching, C. L., asst.-surg., ordered to duty under instruction at the naval medical school, Washington, D. C.

Hayes, O., A. A. surgeon, ordered to the marine recruiting station, Denver.

Asserson, F. A., surgeon, ordered to duty at the naval hospital, Boston.

Holloway, J. H., P. A. surgeon, ordered to the naval hospital, Las Animas, Colo., for treatment.

U. S. Public Health and Marine-Hospital Service

Changes for the fourteen days ended Oct. 11, 1911.

Perry, J. C., surgeon, detailed to represent the Service at the Fifth International Sanitary Conference of American Republics to be held at Santiago, Chile, Nov. 5-12, 1911.

Anderson, J. F., P. A. surgeon, detailed to represent the Service at the meeting of the National Committee on Milk Standards to be held under the auspices of the New York Milk Committee in New York City, Oct. 4-6, 1911.

McLaughlin, A. J., P. A. surgeon, directed to proceed from Chicago to Topeka, Kan., on special temporary duty.

Rucker, W. C., P. A. surgeon, detailed to represent the Service at the next annual meeting of the Mississippi Valley Medical Association to be held at Nashville, Tenn., Oct. 17-19, 1911.

Salmon, T. W., P. A. surgeon, granted six months' leave of absence, without pay, from Oct. 18, 1911.

Pettyjohn, Joseph, P. A. surgeon, granted two months' leave of absence from Sept. 16, 1911.

Frost, W. H., P. A. surgeon, directed to proceed to Cincinnati and Covington, Ky., on special temporary duty.

Bryan, W. M., P. A. surgeon, granted seven days' leave of absence from Oct. 3, 1911.

Grimm, R. M., asst.-surgeon, detailed to represent the Service at the next annual meeting of the Medical Association of the Southwest to be held in Oklahoma City, Okla., Oct. 10-12, 1911, and the Mississippi Valley Medical Association to be held in Nashville, Tenn., Oct. 17-19, 1911.

Bingham, E. O., acting asst.-surgeon, granted fifteen days' leave of absence from Oct. 7, 1911.

Cheney, E. L., acting asst.-surgeon, granted fourteen days' leave of absence from Oct. 12, 1911.

Coffee, J. H., acting asst.-surgeon, granted twenty days' leave of absence from Oct. 15, 1911.

Keiller, William, acting asst.-surgeon, granted twenty days' leave of absence from Sept. 26, 1911.

Moorer, M. P., acting asst.-surgeon, leave of absence for fourteen days from Sept. 5, 1911, amended to read eleven days from Sept. 9, 1911.

Ransom, S. A., acting asst.-surgeon, granted leave of absence for a further period of one month from Dec. 1, 1911, without pay.

Underwood, F. R., acting asst.-surgeon, granted twenty-six days' extension of annual leave on account of sickness from Aug. 23, 1911

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

THE ECONOMIC VALUE OF SANITATION

Vital statisticians and sanitarians for years have been showing the enormous toll of human life exacted each year through ignorance and lethargy. It has been said again and again that, if this loss was in dollars instead of human lives, the necessary reforms would be quickly brought about. Probably the most unique as well as the most promising feature of the present health movement is that it is being demonstrated that health is wealth, not in the old figurative meaning, but as an actual fact, and that avoidable sickness means waste and financial loss, not only to the individual but to the community. An interesting illustration of the fact is found in an article on "The Tropics and Health," by Dr. D. W. Montgomery of San Francisco, which appeared in a recent number of the *Canadian Practitioner and Review:*

SEVERAL REASONS WHY FLIES SHOULD BE UNWELCOME GUESTS.

"Formerly everything seemed especially arranged to make Rio a pest-hole. It had a land-locked harbor with abundance of moisture, and a hot sun beating down into it. The upper classes of its population were lazy and ignorant, and its lower classes were composed of poor whites and recently emancipated slaves. It was an old Portuguese city with narrow streets, no sanitation worth mentioning, and enough mosquitoes of the right breed to infect with yellow fever a people reduced to the proper degree of receptivity by crowding, by climate, by miscegenation, and by poor food.

"But Rio is clean! How was the marvel accomplished? It is due, like many a blessing, to misfortune. The misfortune was yellow fever, and the enlightenment consequent to scientific modern medicine furnished the means of combating it. The change came with the advent of bacteriology and clearer views in regard to the causes of the acute infectious fevers. As a consequence of this clearness of view, more precise international quarantine laws were enacted, and under these the trade of Rio languished, and the peculiar bitterness of this lay in the fact that the ships that were avoiding Rio de Janeiro were passing on to its rapidly growing southern rival, Buenos Aires. Envy and loss of trade finally drove the authorities into action: two broad streets, the Avenida Central and the Cinco de Marzo, were opened up through the old crowded city; a beautiful sea wall and esplanade were built along the city front; the sewerage was so treated as not to foul the waters of the bay; and the markets were put in a sanitary condition. The meat-shops are delightfully neat; and the market on the waterfront is a model of cleanness, lightness and airiness. A good corps of health inspectors make frequent house-to-house visits, and by the free use of creolin, and by prohibiting the accumulation of stagnant water in tubs or elsewhere, the mosquito pest is almost abolished. The water-supply of Rio, drawn from the neighboring hills, is good. As a consequence of these sanitary measures there has been no yellow fever in this port for years, and there is very little typhoid fever.

"The fear of death alone would never have brought about these beneficent results. The high death-rate would have been patiently borne as it had been for ages, and would have been regarded as a visitation of Providence. The blessing was achieved through a love of gain, and a fear of loss, ably supported by the neighborly envy and hatred the Brazilian bears toward the Argentino. By the help of these ignoble passions of avarice, fear, envy and hatred, results were obtained that wisdom, learning, charity and all their cognate virtues could never have accomplished."

CONTRACT PRACTICE

Report of the Committee of the Omaha-Douglas-County Medical Society

The report of the Committee on Contract Practice of the Omaha-Douglas-County (Nebraska) Medical Society, given herewith, is one of the most valuable contributions yet made to the discussion of the question. Particularly commendable is the recognition of the economic necessity underlying the retaining of surgeons by railroads and other industrial corporations, with the distinct proviso, however, that medical services should be limited to the examination and treatment of employees incapacitated directly as a result of employment, or, as is said in the government services, "in line of duty."

"We, the committee appointed by the Omaha-Douglas-County Medical Society to investigate the broad subject of contract practice, desire to state that we have given this subject careful study and discussion. Each member studied some phase of the question, and your committee as a whole has analyzed without prejudice the combined information. We herewith submit for your consideration the following conclusions:

"1. Your committee recognizes the right of industrial corporations employing labor, to engage the services of skilled physicians, surgeons and specialists at reasonable remuneration, to examine employees as to their fitness for services as

well as to care for said employees in case of injury or acute sickness when on duty, or to care for those to whom the corporation may be under obligation because of accident. This is but a just and fair protection against damage suits brought by the unscrupulous. However, it would be distinctly understood that such service should not be extended to apply to any member of an employee's family.

"2. We believe that industrial corporations employing physicians, surgeons, and specialists, should limit the service of said physicians, surgeons and specialists strictly to the care of their employees during the time of actual service. We also believe that direct representatives and officials of a corporation should not be included in such medical, surgical and special attendance, or in any way construed as coming under the conditions of this class of service.

"3. We believe that all corporations furnishing medical, surgical and special attendance to their employees should do so entirely at their own expense, or, if the employees are assessed for the expense of such medical, surgical and special attendance, they should be untrammeled in the choice of their physicians, surgeons, and specialists.

"4. We believe that contract practice as applied to lodges, fraternities, benevolent, and benefit-organizations, is detrimental to the best interests of the medical profession in general and especially to the physicians employed: that it is especially unjust to all physicians who are subject to ordinary competition, and that it pauperizes the lay public and demoralizes the medical profession in general, teaching the former to expect medical, surgical and special care for practically nothing, lessens their respect for the skill and dignity of our profession, and permits designing men to traffic in and commercialize the practice of medicine.

"5. We believe that such lodge, fraternal, benevolent or benefit-organization and contract practice, as *ordinarily* in operation, is eminently unfair, because it buys medical services at wholesale from the physician, then compels him to peddle out his services at retail, and deprives him of any voice in limiting the amount of service to be rendered for the wholesale price agreed on.

"6. In conclusion, we earnestly recommend that members of our society decline in the future to accept the position of contract physician to lodges, fraternities, benevolent or benefit-organizations, not industrial in character—therefore without all liability—as well as corporation contracts that are not in harmony with these findings.

"JOHN E. SUMMERS,
"H. M. MCCLANAHAN,
"JAMES M. AIKEN,
"F. E. COULTER,
"B. W. CHRISTIE."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

[NOTE.—The pamphlets containing the outline of the postgraduate study course for county societies for the coming year are ready for distribution. Secretaries of county societies can secure supplies by writing to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Ave., Chicago.]

Second Month—Third Weekly Meeting

GUNSHOT INJURIES OF HEAD

Character of wound, wound of entrance, wound of exit, effect on inner and outer tables, effect on meninges, effect on brain substance, hydraulic and hydrodynamic pressure. Differences of effects of leaden and jacketed missiles. Effect of initial velocity and range. Medicolegal interest in pistol-shot wounds.

SYMPTOMS: Areas of brain involved.

TREATMENT: Disinfection. Indications for trephining. Use of *x*-ray.

INTRACRANIAL HEMORRHAGES

EXTRADURAL HEMORRHAGE: Middle meningeal artery and branches. Character of wounds, by "contrecoup." Effects of hemorrhage, local and general.

Symptoms: Mental disturbances, "free interval," pulse, respiration, motor disturbances, sensory disturbances, pupils.

Treatment: In compound fracture, indications and technic. In internal hemorrhage, indications for trephining. Krönlein's "sites of election," method of localization.

SUBDURAL HEMORRHAGE: Pial vessels, branches. Character of injuries. Extent of hematoma, quantity, absorption. Differentiate from supradural—(1) free interval, (2) pulse, (3) motor disturbances, (4) localizing symptoms

INTRACRANIAL HEMORRHAGES IN THE NEW-BORN AND CHILDREN[1]

TRAUMATIC MENINGITIS

ETIOLOGY: Injury, micro-organisms present, mode of entrance.

PATHOLOGY: Leptomeningitis, character of exudate, extent, cortex. Pachymeningitis, changes in dura, exudate, origin. Meningitis serosa.[2]

SYMPTOMS: Early and late, Cortical or basilar. Chills and fever, headache, pulse, nausea and vomiting, pupils, delirium, stupor, coma.

Society Proceedings

COMING MEETINGS

Kentucky State Medical Association, Paducah, Oct. 24-26.
Medical Society of Virginia, Richmond, Oct. 24-27.
Southern Medical Association, Hattiesburg, Miss., Nov. 14-16.

MEDICAL SOCIETY OF PENNSYLVANIA

Sixty-First Annual Meeting, held at Harrisburg, Sept. 25-28, 1911

The President, Dr. John B. Donaldson, Canonsburg, in the Chair

The officers elected were named in THE JOURNAL Oct. 7, 1911, page 1217.

The Care of Advanced Cases of Tuberculosis

PROF. WALTER F. WILLCOX, Ithaca, N. Y.: The effective segregation of an increasing proportion of the advanced cases of pulmonary tuberculosis is attended by a decrease in the death-rate from that disease, no matter what other influences favorable or unfavorable may be present, and, conversely, failure to segregate these cases is attended by a stationary or increasing death-rate. The rate at which the segregation of tuberculous patients increases in any community uniformly agrees with the rate at which pulmonary tuberculosis decreases. It follows, then, that in combating the disease the main effort of public health workers should be directed toward the extension of hospital accommodations for advanced cases and the increased segregation of such cases.

DISCUSSION

DR. W. C. WHITE, Pittsburgh: There are certain peculiar features of advanced cases of tuberculosis which are often lost sight of and which it is essential to consider before any scheme for their care can be adopted. Advanced consumptives are sick, and provision must be made for their continuous stay in bed with adequate nursing. Our ordinary sanatoriums and institutions for the sick refuse them admission; private practitioners want to get rid of them, and boarding-houses and homes discharge them without compunction. Few of them can ever be put in such shape as to return to their former occupation, and many of them under the proper care live for many years unable to work. These patients are sources of infection if they are the least bit careless, and, submitted to the scrutiny and remarks of acquaintances, they are very apt to become careless. These patients have in most countries the rights of citizenship and can and do refuse daily to accept the opportunity open to them for institutional care for even a few weeks or months, thus making the large institutions far from centers of population of much less value than they otherwise might be. While much evidence can be adduced to show that a marked reduction in mortality in tuberculosis can be obtained without it, the efficient and practical care of patients in advanced tuberculosis is one of the important elements, if not the most important element, in our endeavor to control this disease. The law must eventually be the means by which this infection is controlled. Proper provision should be made for tuberculous patients in asylums, jails, poorhouses, orphanages, homes, etc. A third necessity is the provision of separate institutions for the care of these patients; finally, proper provision must be made for their care in their homes.

DR. WILMER R. BATT, Harrisburg: I am unable to accept the conclusions of Professor Willcox because the statistics which he has submitted in regard to the reduction of mortality

1. Scottish Med. and Surg. Journal, June, 1906. Frazier: Trans. American Surgical Assn., 1906. Progressive Medicine, March, 1907 and 1908.
2. Ballance: Lancet, Dec. 21, 1907.

in England and other European countries refer to the general institutional care of tuberculosis and not to advanced cases alone; owing to the migratory tendencies of tuberculosis sufferers the mortality rates in any single American city are not sufficient evidence on which to base accurate estimates of the decline of the disease from any particular item of prevention; considering the average duration of tuberculosis it is impossible to estimate the value of preventive measures which have not yet reached their full development. To provide principally for advanced cases of tuberculosis and minimize the opportunity for those suffering from the disease in the early stages can be excused only on the assumption that it is the hopeless and dying that are dangerously infective. The bacilli in incipient or moderately advanced cases are as dangerously infective as those in advanced cases and infinitely more widely distributed.

DR. T. B. APPEL, Lancaster: The conclusions drawn by Professor Willcox seem to me to be most timely and most important. As the terminal stages of tuberculosis seem to present the greatest dangers of contagion, more effectual precautions should be taken in such cases to combat the spread of consumption. We as general practitioners know that patients come back from sanatoriums educated in the proper care of themselves, but they come back to the same insanitary surroundings and in my experience in time become careless, lose ground and in the end succumb to septic phthisis. Therefore, if better means of segregation of these poor, ignorant, hopeless ones can be obtained, their care would be much more effectual.

Blood-Pressure and Pulse-Rate in Pneumonia

DR. H. A. HARE, Philadelphia: The favorable ratio in croupous pneumonia is one in which the pulse-rate per minute is less than the number of millimeters of mercury as shown by the sphygmomanometer. In other words, if the pulse-rate be 90 and the blood-pressure 120, the patient is doing very well. If the pulse-rate be 100 and the blood-pressure 110, he is not doing as well as before. If the pulse-rate be 110 and the pressure 110, something must be done to bring back the normal difference already referred to, and, if the pulse-rate be 120 and the pressure 110, the patient is in grave danger and will probably die unless very active treatment causes him to rally before this abnormal ratio has lasted for any length of time. The fall of pressure may be considered to be the result of the toxemia which directly affects the vasomotor centers or the walls of the vessels themselves, or it may be due to a direct effect on the heart muscle, whereby this organ is unable to pump strongly enough to maintain pressure. It is of some importance to determine, if possible, whether this fall of pressure is due to one cause or the other, for, if it be vasomotor or vascular, direct cardiac stimulation is not needful, although it is true that most vascular stimulants are also heart stimulants. On the other hand, if the heart be at fault, attention must be directed chiefly to this organ. If the vessels be at fault, the difference between diastolic and systolic pressure will be marked, the heart, if strong, sending out a forcible wave of blood in an endeavor to fill the blood-paths. If the pressure be low from a failing heart, there will be little difference between diastolic and systolic pressure for obvious reasons. There is no treatment of pneumonia but there is treatment of the pneumonia patient, and this will vary in every case.

The Care of the Insane

DR. T. H. WEISENBURG, Philadelphia: Of all the problems which are now before the profession there is none more pertinent than the care of the insane. It seems to the alienist almost nonsense that general hospitals throughout the state should take care of medical and surgical patients and refuse to take care of the insane, thus making it necessary to send them to an asylum or a private sanitarium. The time has come when it is necessary that all general hospitals should have separate wards for the care of the mentally afflicted. A bill will be introduced in the next legislature providing for the placing of all the insane of the state in state institutions with proper provision for the criminal insane, the feeble-minded and epileptic. In this way the care of the insane by the various counties will be abolished. There are to be established two laboratories for the study of the causes of insanity.

(To be continued)

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Indianapolis, Sept. 28-29, 1911

The President, DR. F. C. HEATH, Indianapolis, in the Chair

The Sociologic Aspects of Syphilis

DR. C. E. BARNETT, Fort Wayne: The sociologic aspect of syphilis is a question of state concern, for syphilis not alone deteriorates the state's own subject and his progeny, but they, on account of their syphilitic degeneration, help to fill the state institutions, thus bringing a monetary factor into play. In my opinion the present publicity education on venereal diseases, for the time being, is a detriment rather than a benefit to humanity. When, however, the education finally permeates the mind sufficiently to show the dangers of inoculation and the necessity of preservation of the body against syphilis, then the good will have been done on account of education. The question of marriage when lues is present is almost entirely in the hands of the attending physician, and he is a coward if he fails to protect the innocent.

Diagnosis of Syphilis

DR. W. F. GARSHWILER, Indianapolis: The diagnosis of syphilis is based, first on certain usually well defined clinical symptoms which appear usually in regular order; second, finding in the blood-serum the organism of syphilis; third, by the therapeutic test, and fourth, by the blood-serum test of Noguchi and Wassermann. The fact that under all conditions, primary, secondary or tertiary lesions, dead or living, the spirochete usually maintains its characteristic shape, makes it easy to distinguish it from other spirilla. The therapeutic test should never be used to diagnose primary syphilis.

The secondary symptoms are usually an acute toxemia followed immediately by polymorphous skin lesions. The later secondary skin lesions are usually a relapse of the earlier secondary lesion of the skin and mucous membrane. In the secondary stage the dark field illuminator and the Wassermann test will prove of the greatest help in diagnosis. The therapeutic test has no place in the diagnosis of secondary syphilis, for the reason that the lesions tend to spontaneous recovery and that mercury and potassium iodid affect other diseases which simulate syphilis.

The diagnosis of tertiary syphilis becomes relatively more difficult by every method, except the therapeutic, the longer the time has elapsed from the secondary stage. The demonstration of spirochetes in the tertiary lesions is more difficult, on account of their lessened number, and failure to find them in lesions apparently specific proves nothing. The Wassermann test is far less reliable in the third than in the secondary stage. The therapeutic test becomes a valuable aid when other methods of diagnosis fail in tertiary lesions, and should be used only for diagnosis, and only in this stage, and not until other methods have failed.

Treatment of Syphilis

DR. D. C. RIDENOUR, Peru: The treatment of syphilis falls into two divisions, (a) practical, and (b) theoretical and experimental. Under the first I follow the treatment of those who favor the administration of treatment by mouth and inunction, rather than hypodermically. Syphilis is a septicemia. I would, therefore, advocate a continuous, intermitting, eliminative treatment as the most practical. Another form of treatment which gives good results is the local inunction with mercurial ointment. Sulphur baths in conjunction with mercury are excellent. Salvarsan has proved not to be a *therapia sterilizans magna*, but it is a valuable addition to the means of combating syphilis. The hypodermic mode of treatment of syphilis is painful, in many patients excites apprehension and is bitterly objected to. Furthermore, the need of the precedent administration of cocain or morphin, as so frequently advocated for relief of the pains caused, is in itself very objectionable. It is occasionally dangerous and sometimes rapidly fatal. It is very liable to be followed by certain local complications, such as erythema, cellulitis, painful nodosities, abscess and sloughing. It cannot be carried out by the patient, but requires the attention or intervention of the physician-surgeon. However, if patients demand hypodermic

treatment. I would suggest the daily injection, intramuscularly, of 30 minims of liquor potassi arsenitis, with mercury by mouth.

DISCUSSION

DR. F. B. CHARLTON, Indianapolis: There is just one reasonably effective solution in sight. We are already working for a national health organization with a chair in the cabinet, and, perhaps, when that comes about there may be something done with this question. We may get national laws by which we can handle the question of prostitution and indiscriminate relationships in a way that we cannot now. I do not see anything hopeful in dealing with it in any other way than by national legislation. There must be authority to control and authority to inflict penalties. As to diagnosis, I want to emphasize the necessity of getting the history in syphilis. I look on the taking of the proper history as one of the most essential points. Individuals have been pronounced syphilitic who never have had syphilis. This blunder is almost as pernicious as to make a mistake on the other side. As to the intramuscular injection of mercurials, this method is nearly universally accepted. We are giving mercury in its metallic form as calomel or the salicylates, and we are getting good results. Moreover, we never give cocain or morphin to control pain. There is no particular pain at the time, sometimes a little feeling of a bruise twelve hours after. What are the advantages of this method over the old one of giving a man some medicine and sending him home to treat himself? Where they get an injection once a week or ten days, we get results, for they get the medicine. The other way they get the medicine incidentally—when they think of it, and too often they forget it altogether.

As to salvarsan, I doubt whether there has ever been a drug in the history of therapeutics so extensively studied, experimentally and practically, as salvarsan. It has been shown that there are no toxic effects from salvarsan, and that the eye does not suffer. There is only one complication, and that is in atheromatous conditions when the blood-pressure is high and the vessel walls weak. It clears up certain malignant cases that never yielded to the old methods. Give salvarsan and in forty-eight hours the patient can go home to his family without any fear of infecting them.

DR. A. W. BRAYTON, Indianapolis: What shall we do in a case of syphilis? Diagnose it along modern lines, by the clinical symptoms, by the history, the organism and the Wassermann test, and then treat it according to the best of our judgment and knowledge as taught by the ancient, and, especially, the recent, history of the disease. We have come to the parting of the ways in the treatment of syphilis. We have a new addition to our therapeutics that cannot be laughed down—salvarsan. We can control our cases absolutely with mercury, if given rightly. Then why use salvarsan? Because it is safe, it acts quickly, and there is no risk (and this is the greatest value of salvarsan) of the patients infecting other individuals in twenty-four hours after taking treatment. When you come to consider the subject two or three years from now, there will be but one voice—and that will be for the intelligent treatment of syphilis by salvarsan, to protect the patient and the community.

Acute Anterior Poliomyelitis

DR. W. D. HOSKINS, Indianapolis: Within the past five years there have been reported more cases of this disease than in all the previous history of medicine. The disease has long been suspected of being contagious, and a brief summary of its recent history will undoubtedly confirm the suspicion. Bacteriologists have not yet succeeded in demonstrating any constant specific organism. The virus passes unchanged through the finest filters. The pathology of the disease has for some years been known to be a degeneration of the motor cells in the ganglia of the anterior horns of the cord. A few points remain obscure. What is the reason for the decided preference for the anterior horns? Why are certain areas of the cord, notably the cervical and lumbar enlargements, especially vulnerable? Is the degeneration in the anterior horns a primary lesion, or secondary to other parts of the pathologic process? The consensus of opinion now is that the infection is primarily a vascular one. One attack of poliomyelitis usually renders the individual immune. Second attacks have been observed, but are rare. In many mild cases complete recovery occurs. Of the epidemic cases, complete recovery occurs in about 25 per cent. The mortality in epidemics is approximately 12 per cent; in sporadic cases, 6 per cent. We hope there will soon be an immunizing serum. In the meantime, we can do something toward protecting the little ones in our care by acquiring an intelligent knowledge of the disease, making early diagnosis and preventing the spread of the infection.

DISCUSSION

DR. F. B. WYNN, Indianapolis: This subject has been brought to our attention particularly by the agitation regarding it carried on through various public health agencies, and very properly, of course, because our modern knowledge of this disease teaches us that we are dealing with an infectious disease. The problem is to recognize this disease early, and that is hard to do. I do not know until the paralysis has come. I say to these patients, drink water, flush the system, dilute the toxins, keep the bowels very free—do anything to help get rid of the toxins. That is old-fashioned practice, but in these cases I believe it is the best practice. Then isolate the patient and take proper care of the secretions of the nose, which are known to be highly infectious in character.

DR. ALBERT E. STERNE, Indianapolis: We have always had acute poliomyelitis with us. There is nothing new in its sporadic occurrence. Of course, we do not see the acute cases so often, but the subacute cases have always been with us. While I believe this disease will spread by contact, we are not absolutely certain whether we are dealing with a contagious disease, an infectious disease, or a contagious-infectious disease. I subscribe most heartily to what has been said in regard to the necessity of taking cases of this kind in hand early and watching them. But what I would like to most see is the profession awakened to the real danger of procrastination in the treatment of these conditions. We should treat this like any other deep-seated inflammation. We should prevent deformities, and we can—in cases that we see early.

DR. G. W. MCCASKEY, Fort Wayne: We do not even know enough about this disease to give it a name. It is not purely an infantile disease. It may occur in substantially the same form in adults. So, if we are going to be punctilious about the name, we must not call it infantile paralysis.

Tuberculin and Autogenous Vaccines in Pulmonary Tuberculosis

MR. R. T. PETTIT, Ottawa, Ill.: Of 2,841 patients treated with tuberculin there were 1,932 patients cured or benefited from one to seven years after discharge, or 68 per cent. In the 19,249 not treated with tuberculin, 9,614 were cured or benefited, or 50 per cent. This shows an advantage of 18 per cent. in the tuberculin-treated group, a very substantial advantage. At the Ottawa Tent Colony, the results show that the percentage of incipient cases with cure or benefit in the tuberculin-treated group is about the same as in the untreated. However, the percentage of deaths in the untreated is over twice that in the tuberculin-treated group. In the moderately advanced stage, the tuberculin treated patients show a marked advantage, and in the far advanced stage, both treated and untreated, little in the way of treatment can be done.

With regard to autogenous vaccines, while it is yet too early to come to any conclusion regarding the ultimate results, I believe that in these vaccines we have another valuable adjunct to our present methods of treatment, and I believe we are justified in stating that in tuberculin and autogenous vaccines we have two valuable assets in the treatment of tuberculosis. However, we should not neglect the more valuable hygienic and dietetic principles of increasing the general resistance for these other methods of increasing the specific resistance, but, in order to produce the best results, they should be used together.

Local Use of Tuberculin in the Treatment of Open or Surface Forms of Tuberculosis

DR. THOMAS J. BEASLEY, Danville: The first point in these cases is to make a positive diagnosis, which is somewhat difficult. The tubercle bacilli may be found by the microscopic examination of the exudate. In a few instances I have applied tuberculin directly to the parts involved, and if a marked local reaction occurred, it seemed fair to conclude that it was a tuberculous infection. The therapeutic dose of tuberculin, when introduced hypodermically, causes tuberculous areas to become congested for a period of several hours. By the local application of tuberculin to open or surface forms of tuberculosis we can produce a similar reaction at the seat of infection, and by careful observation and repeated applications we can maintain in the tissues involved a constant reaction by gradually increasing the strength of the solutions employed. In applying tuberculin to such large areas as are frequently presented in some of these cases, great care must be exercised that the dose be not large enough to permit of enough absorption into the system to cause a general reaction. If the dose be too large in the beginning, the tissues may become insensitive and some difficulty may be experienced in producing subsequent reaction. It, therefore, seems advisable that the initial dose be small, and it is always dependent on the extent of the area to be treated. The tuberculin is applied by using a hypodermic syringe to spray the solution over the entire surface of the diseased parts. Where deep sinous tracts are to be treated, a flexible cannula is attached to a hypodermic syringe. When the cannula has traversed to the depth of the sinus, it should be withdrawn carefully and as the withdrawal is being made, the syringe should be emptied slowly of its contents. Enough of the solution should be used to fill all openings.

Twenty-four to forty-eight hours after the first application, a marked change is observed in the parts treated, the discharge being greatly lessened. The wound is not disturbed, except for the renewal of external dressings. Forty-eight hours later the severity of the reaction begins to subside. The parts are again irrigated with a saline solution, and an increased strength of tuberculin is applied. The treatment is repeated as often as seems necessary until a cure is produced. The value of this treatment in osseous involvements is yet to be determined, but it is reasonable to expect good results in this class of cases.

MICHIGAN STATE MEDICAL SOCIETY

Forty-Sixth Annual Meeting, held at Detroit, Sept. 27-28, 1911

(Continued from page 1307)

Nitrous-Oxid-Oxygen Anesthesia

DR. RICHARD R. SMITH, Grand Rapids: The advantages of nitrous-oxid anesthesia are: the decreased toxic effects, shown by clearer mentality following operation, lessened vomiting, quicker recovery from operation, lack of toxemia and lessened shock. These advantages are best seen in prolonged operations, to which nitrous-oxid-oxygen is especially adapted. Patients that one would fear to operate on under ether can sometimes be operated on safely under this administration. It encourages in the surgeon gentleness of touch and thoroughness, since he is less apt to be hurried by any danger attending a long anesthesia. Do not use it in operations on very robust patients, alcoholics, patients of exceedingly nervous temperament, and in operations on the head and throat.

Physostigmin Combined with Morphin in the Treatment of Pain Following Abdominal Operations

DR. B. R. SCHENCK, Detroit: At present in the postoperative treatment of patients, there is a general unanimity of opinion, except in regard to the use of morphin. Some surgeons never use the drug while others give it almost, if not entirely, *ad libitum*. The majority use it sparingly, relying on codein or heroin. Morphin would be used universally (except in cases where there is danger of masking important symptoms) were it not for its paralytic effect on the intestine and its causing vomiting. Combining physostigmin with it seems to antagonize the effect on the intestine. I use tablets containing gr. 1/6 of morphin and gr. 1/75 of physostigmin. As many hypodermics of this are given as are necessary, the bowels moving well with an enema on the third or fourth day. The discomfort of the dreaded "third day" is entirely removed. The combination tablet relieves pain as well as plain morphin and prevents gas accumulation and meteorism.

DISCUSSION

DR. W. P. MANTON, Detroit: I have used more or less extensively both morphin and physostigmin—but not the combination. It seems to me that in this day and generation the use of morphin should be done away with very largely. For probably more than twenty years I was in the habit of giving laxatives and cathartics the night before the abdominal sections, and during all that time I had frequent cases of abdominal distention, sometimes extreme. For the last six or eight years I have given up entirely the use of laxatives before abdominal operations, and as a result I have rarely had a case of distention. In those cases I have employed physostigmin with, in a majority of instances, good results, but I have never given it in large doses. Instead of morphin I have used codein phosphate almost *ad libitum*, and I find a small amount of pain and irritation resulting from the inflammation taking place from the incision in healing, and codein phosphate has controlled all the symptoms, so that nowadays I very rarely give a dose of morphin. I have no doubt that the combination of morphin and physostigmin is a good one, if you are bound to use morphin in these abdominal cases, but I think that morphin can, in a majority of these abdominal cases, be omitted.

DR. E. M. HOUGHTON, Detroit: It is readily recognized that morphin is, perhaps, the drug par excellence for controlling pain, but it has always been, I believe, open to the question whether to give it internally or subcutaneously, in which case it is excreted very promptly. I think that some have shown that morphin given subcutaneously is excreted back into the bowel inside of two or three minutes. Whichever way the drug is given, you get an action on the bowel and you get more or less of a paralysis and a lessened peristalsis. We know that morphin controls the pain largely because of the central action of the drug, and it seems to me that Dr. Schenck's idea that it would be wise to use physostigmin in combination with morphin rests on a good basis. In physostigmin you have something that stimulates the muscle in the wall of the intestine to contract. I believe a good many experiments have been made to show just whether it acts on the muscle fibers or on the nervous mechanism in the muscles, but so far no one has been able to pin the matter down exactly.

DR. JOHN N. BELL, Detroit: I would like to ask Dr. Schenck to tell us whether or not his use of physostigmin and morphin has relieved the tendency to nausea which is also so distressing after using morphin. I have used codein phosphate for some years, and it has been my experience that not infrequently, although I have given 2½-grain doses, I have still been forced to resort to morphin to relieve pain.

DR. RICHARD R. SMITH, Grand Rapids: The treatment of postoperative vomiting is on the table—in the giving of just as little anesthetic as possible. So it is with this matter, I believe, of postoperative pain—postoperative ileus—postoperative distention. The treatment of these begins on the table, and means a brief and gentle manipulation, and when the surgeons work with this in view real progress will be made.

DR. B. R. SCHENCK, Detroit: I agree that the cause of postoperative distention and postoperative discomfort is not how you prepare the patient and treat him afterward, but how you treat him while he is on the table; but even though you treat him with the greatest respect, he is going to have some discomfort. Codein is not as good an analgesic as morphin. Regarding the nausea, although I have given three or four sixths of morphin the first twenty-four hours, I certainly think the nausea has not been any greater or perhaps less, but there are so many factors that enter here that, perhaps, we are a little prejudiced and allow our judgment to lead us to form opinions which are not correct.

The Need of a Better-Developed "Obstetric Conscience"

DR. CHARLES E. BOYS, Kalamazoo: By the term "obstetric conscience" is meant that development of mind which has to do with generalship and exactness of technic in obstetrics. An obstetric operation is just as important, and should receive just as much attention in regard to sterile dressings, aseptic technic and freedom from hurry or need of attendance on other work as a surgical one. A good "obstetric conscience" would undoubtedly prevent many lacerations, but is of most importance in the prevention of sepsis. We make elaborate preparations for removing an infected appendix which may have ruptured, and where the surgeon has no responsibility for the present condition of the patient but we take a clean healthy woman and allow her to become infected following a forceps delivery. The same surgical care should apply in obstetric work. The Kelley pad is a dangerous thing because so difficult to sterilize. I prefer newspapers, direct from the mills, as they are more nearly sterile.

DISCUSSION

DR. W. P. MANTON, Detroit: For a long time I have insisted on absolute cleanliness, but we know that absolute cleanliness in the ordinary house is not to be obtained. I think the time is coming when every woman who can get to a good lying-in hospital, or a good hospital where they take obstetric cases, will go to that institution. As to the Kelly pad, the doctor said he used newspapers, but he did not say that he sterilized those newspapers. I take it for granted that he did; but, of course, we all know that there can be nothing that is more likely to be germ-laden than the ordinary newspaper.

DR. H. WELLINGTON YATES, Detroit: As far as the Kelly pad is concerned, I disagree. I think it can be sterilized. The Kelly pad used in obstetric work should not be used in general practice at all. Too much attention is paid to mortality and figures of that kind. As a matter of fact, every once in a while you see some fellow who has had a series of some four thousand patients without one case of infection. This nonsense means that he has not had one die, and he, perhaps, may be honest in that and there can be only a few who can be honest in that. But the matter of morbidity is another question, and as a matter of fact if those cases were taken care of properly the field of gynecology would be wiped out. The question of morbidity rather than mortality is the thing that interests us most. We may only lose one once in a while, but the morbidity!

DR. W. C. STEVENS, Detroit: I like the paper pad. I have used it many years. I have the woman take those paper pads and iron thoroughly on an ironing board with a red iron, as red as she could use without scorching it. Then I have her pile those up and quilt them through and through, and it does not take many pages of an ordinary Sunday paper to turn water; then I have her roll them and put them in a chest somewhere in an unused room or attic, and fill that chest, putting in plenty of formaldehyd.

DR. CHARLES E. BOYS, Kalamazoo: As to the sterile condition of the paper: In the paper mill the material is, first of all, immersed for 24 hours in a strong solution of chlorid of lime, to take the color out of the rags and the paper that the paper is made of. From there it goes into a large vat of chlorid of lime for twenty-four hours more; from there it is poured on a screen and rolled through fourteen or sixteen rollers of superheated steam, and that sterilizes it. From there it rolls on the printing press, and the ink is sterile. They do not fold the papers by hand any more, and the paper is not touched at all until it gets into your door yard, and then it is unfolded. Suppose you do use a dirty newspaper or a dirty kitchen table. That is of the smallest importance, because you don't put a woman on the kitchen table, but it is always covered by something to protect her from pressure injury. You cover this up, and even if you use papers, or the Kelly pad, of course this would be covered with sterile towels which are carried along.

(To be continued)

AMERICAN ROENTGEN RAY SOCIETY

Twelfth Annual Meeting, held in Richmond, Va., Sept. 20-23, 1911

(Concluded from page 1309)

Compensating Displacements of the Thoracic Viscera in Pulmonary Tuberculosis

DR. CHARLES LESTER LEONARD, Philadelphia: Compensation for the loss of expansion in the lungs takes place through an increase in the capacity of their normal area, or through the interposition between the visceral and parietal pleura of an area filled with air, or fluid, or both. These changes must take place in proportion to the volume of the lungs involved in a pathologic process. They are in a measure appreciable by the ordinary methods of physical diagnosis. The changes which can be noted by inspection and mensuration are, however, less marked in ratio with the extent of the disease than those within the thorax, which produce displacements or alterations in the position of the viscera. An internist connected with one of the largest institutions for the special study of tuberculosis did not believe that displacements of the viscera could occur so frequently in the earlier stages of the disease. He said that in some hundreds of post-mortems conducted at the institute they had failed to find such displacements.

These pathologic variations in the position of the thoracic viscera can be shown clearly only by the rapid roentgenograms that eliminate the heart's motion. Their exact position and interthoracic relations can only be fully appreciated by the rapid stereo-roentgenogram. In the entire series of one hundred cases, twenty-six displacements of the heart and aorta were found, with three cases of pneumothorax. In seventeen cases the heart was displaced to the right; in four to the left; and in five a rotation took place, with an upward displacement of the heart and aorta, so that the heart assumed an antero-posterior position. In two cases a superficial pneumothorax was found overlying the lower left lung, and in one case an acute hydro-pneumo-thorax of tuberculous origin was shown.

A review of the cases in the entire series shows that those cases in which no displacement of the viscera was present were early lesions, in which no fibroid change had taken place, or that the lesions were not extensive and symmetrical, or that the heart was bound down by adhesions between the pericardium and the diaphragm. The unequal elevation of the two halves of the diaphragm, Williams' sign, was present in less than one-half of all the cases, and was not present where displacements of the interthoracic viscera had occurred.

The pathologic displacements of the thoracic viscera in pulmonary tuberculosis are the result of compensation for the destruction of expansive normal lung tissue by the disease. The displacing force is the result of one or two changes, or the combination of both, or, as in the case of acute pneumothorax, from the rupture of the lung. The consolidated lung area may undergo fibroid change and contraction, the contracting tissues drawing the heart and aorta with them, while the emphysematous lung on the opposite side assists in their displacement.

In addition to the displacements which cause compression of the diseased portion of the lung, there is present in many cases an ossification of the costal cartilages and an approximation of the ribs over the affected area. The compensating displacements may be divided into four groups. Displacements of the lung by superficial pneumothoraces; displacements of the heart upward and into an antero-posterior position; displacements of the heart and aorta to the left; and displacements of the heart or heart and aorta to the right.

The Control of Fracture Work by the Roentgen Ray

DR. ROLAND HAMMOND, Providence, R. I.: The time is near at hand when no fracture or joint injury will be considered to have been treated properly if a Roentgen examination has not been made. It is a well-recognized fact that a Roentgen plate should be taken after an attempt at reduction has been made, to see if the desired result has been obtained. Of almost equal importance is a plate beforehand to know accurately with what condition we have to deal—a fact not appreciated by the pro-

fession at large. With the knowledge thus obtained, the reduction can often be easily made, and with but slight trauma to the parts. Many cases now subjected to open operation and plating could be treated by extension and counter-extension after the method of Bardenheuer and Graessner, with as good anatomical and functional results, and at less risk and greater comfort to the patient. In many cases which seem irreducible, plates made while the patient is under ether and after successive attempts at reduction have been made will often give the clue to the situation, enabling the reduction to be made without resorting to an open operation. Some fractures are irreducible by the above methods and an open operation is necessary. In these cases an absorbable suture material should be used, if possible, reserving wire and plates for cases in which the fragments can be held by no other means.

DISCUSSION

DR. ARTHUR HOLDING, Albany, N. Y.: It is our duty to impress on the surgeon that this fracture work must be controlled by the Roentgen ray. Only by this means can we determine absolutely whether the approximation of the fragments is as it should be. We must not hesitate to advise the surgeon to sacrifice his pride and reset a bone. In fact, the Roentgenologist may be in the rather trying position of having to protect the surgeon and the patient. We must be careful, however, when we use the Roentgen ray while the patient is still under the ether anesthesia. I have seen several instances in which the spark has caused serious damage, even when the tube was not anywhere near the ether can or mask. The spark jumped to the iron bedstead and in that way got to the ether can, and in one case there was produced a conflagration in which the patient was injured seriously. The ether bottle should be out of the room and the can away from the patient's face before the tube is excited.

DR. LEWIS G. COLE, New York: I use bromid paper instead of a plate. One can show as much on the paper as on the plate in from two to three minutes from the time the exposure is made. The prints may be made as rapidly as can be done. This applies not only to fractures, but to foreign bodies.

DR. GEORGE C. JOHNSTON, Pittsburgh: The only man competent to treat fractures correctly is he who controls his work with the Roentgen ray. It is also necessary to examine these fracture plates stereoscopically, especially in the case of fractures of the shoulder. The orthopedist is the man to treat fractures.

Collaboration Essential in the Diagnosis of Surgical Conditions of the Kidney and Ureter

DR. JOHN HUNTER SELBY, Rochester, Minn.: This cooperative examination opens up additional possibilities, especially in that large group of abdominal cases seen in daily practice which exhibit an indefinite line of symptoms referable perhaps to the appendix, gall-bladder, stomach, duodenum, spine or genito-urinary tract, but with a strong possibility of involvement of the genito-urinary tract. Such cases require careful study, and some of them tax every means at our command before we can approach an accurate diagnosis.

In St. Mary's Hospital (Mayo Clinic), all such cases are referred to the Roentgen laboratories for examination. The routine examination in this clinic may be described as follows: A full history is taken, and a physical examination made. A twenty-four hour specimen of urine is reported on, and perhaps a gastric analysis is made—all of which may throw considerable light on the case and yet not clinch the diagnosis. The Roentgenologist is then called on to examine the case and after the proper preparation of the intestinal tract a set of stereoscopic plates of the upper abdomen, and a second set of the lower abdomen and pelvis, are made by the rapid method; that is, while the breath is held. If this examination fails to reveal any abnormalities, we have not yet ruled out the genito-urinary tract. If, then, in the light of the clinical findings and negative *x*-ray examination, the diagnosis is still under suspicion, the patient goes through a second preparation of the intestinal tract and is referred to the cystoscopist the following day. In the meantime, the original plates are studied and a consultation is held between the physician in charge, the Roentgenologist, and the cystoscopist. This, at times, furnishes the cystoscopist with much-needed information, and establishes a new working basis for the Roentgenologist, should subsequent events indicate a second *x*-ray examination. The cystoscopist now makes his thorough routine examination and he alone may clear up the diagnosis by one of his ingenious methods, and thus eliminate the necessity for the "combined examination." He may gather evidence to confirm the original *x*-ray findings or to disprove them. Again, he may find evidence of trouble that had not so far been suspected. Therefore, the indications for the combined examination depend on the original *x*-ray findings plus the findings by the cystoscopic examination.

Roentgenographic Diagnosis of Ureteral Kinks Causing Intermittent Hydronephrosis

DR. G. M. STOVER, Denver: Hydronephrosis has heretofore been recognized only in rather an advanced stage, when the dilatation of the renal pelvis is considerable. We have found, and have demonstrated by catheter tests, roentgenograms and surgical operation that there is easily recognizable a much earlier stage of this condition, to be discovered before dilatation of the renal pelvis has taken place. A certain number of patients complain of pain in one or both kidneys; a pain somewhat like that of the classical hydronephrosis, but not relieved by the sudden passage of a quantity of urine and a disappearance of the tumor and without the microscopic urinary findings of fully developed hydronephrosis; a pain suggestive but not typical of renal calculus colic, and in which roentgenographic examination for stone is negative. The symptom-complex in this class of cases has usually been rather vague in its diagnostic indications, and there have undoubtedly been many instances in which a faulty diagnosis has led to operation for conditions which were not present, the trouble being laid to an appendix, a tube, an ovary, or a gall-bladder.

In the class of cases under consideration it was found by Dr. Fowler that the injection of a comparatively small amount of solution (averaging only 14 c.c.) into the pelvis of the kidney produced a pain exactly similar to the pain from which the patient suffered; an injection of the unaffected kidney produced a pain which the patient had never felt there before, but identical with that which had been felt on the other side.

DISCUSSION ON PAPERS BY DRS. STOVER AND SELBY

DR. PERCY BROWN, Boston: I had a case which, clinically, was diagnosed as a nephroptosis, but the Dietl's crisis was out of proportion to the ptosis. I made a roentgenogram and found a kink in the ureter. A ptosis was present, but not startling.

DR. EUGENE W. CALDWELL, New York City: We must encourage this cooperation between the surgeon and the Roentgenologist. We cannot hope to get the best results until we get team work. I would advise Dr. Selby to do more stereoscopic work.

DR. CHARLES L. LEONARD, Philadelphia: It is important to look at these plates stereoscopically. I recently located five stones in the lower ureter. The surgeon would not have found the fifth stone if I had not examined the plate stereoscopically.

Pulmonary Metastases from Papillomatous Cyst of Ovary

DR. HOLLIS E. POTTER, Chicago: Eight years ago a woman was operated on for papillomatous cyst of the right ovary. Regional recurrence necessitated a second and a third operation, six and five years ago, respectively. One year ago a small mass was removed from the right groin. At present there are symptoms and signs pointing to a pulmonary involvement. The roentgenogram cleared up a condition which could not be diagnosticated in any other way. Over the central portion of the left lung is a mass obscuring the heart. It apparently occupies one-half of the left side of the thorax. In the right lung is a mass the size of an orange. There is no pulsation. A diagnosis of cyst was made, but the case was considered inoperable.

Relation of Roentgen Laboratory to the Medical School

DR. EUGENE W. CALDWELL, New York City: There is at present a lack of cooperation between the Roentgen laboratory and the medical college. Five or six schools are beyond crit-

icism in this respect. Most schools have laboratories which are useless and dangerous. In many hospitals a photographer or druggist runs the *x*-ray machine. Nearly all the development in roentgenology has been made by private individuals at their own expense. The results of roentgen examination should be checked up by the roentgenologist in cooperation with the clinician and the pathologist. The hospital and the medical school should make the specialty attractive to medical men who possess the necessary qualifications to do efficient work.

The Use of the Fluoroscope as a Guide for the Bronchoscope and Esophagoscope in the Removal of Foreign Bodies

DR. C. F. BOWEN, Columbus, Ohio: The successful outcome of a foreign body case depends, first, on the diagnosis, and, second, on the method of procedure. No attempt should be made to either use the bronchoscope or the esophagoscope without having a roentgenograph close at hand, and since the Roentgen ray plays such an important part in the diagnosis and treatment of this class of cases, I believe that this work should be done by the roentgenologist himself, who has a knowledge of surgery, rather than by a surgeon with a roentgenologist as an assistant.

The Abdominal Viscera in Auto-Intoxication and Auto-Infection

DR. JOEL E. GOLDTHWAIT, Boston: In the chest and abdomen are the important viscera of the body, except the brain, and the proper relation of these organs, one to the other, determines the health of the individual. The Roentgen ray is of the greatest assistance in determining the position of these organs as well as the disturbances that may result from a malposition of one or more organs. A displaced organ may not suffer of itself, but it may push some other organ out of place and cause that organ to suffer. In the quadruped the abdominal organs hang freely from the backbone, and there is no interference of one with the other. In the biped this relation is changed. One individual in five is born with the organs of a quadruped, although that does not necessarily do any harm in itself, and that is one of the points I want to emphasize.

For instance, these patients have sacro-iliac strain because they are standing out of poise; but that in itself is a cause of visceral strain. If the viscera are not hung right, it leads to a drooped posture. In one such case I saw the stomach was down in the pelvis. Then, the stomach cannot unload itself unless the patient assumes a certain posture. The transverse colon very frequently is dropped away down. There may be a loose liver or loose kidneys. In all these cases there is an absence of retroperitoneal fat. It either never was present or it was absorbed. There is no shelf for the kidney. Sewing the stomach or any other one loose organ into place does not give these patients any relief, except for a short time only. All the loose organs must be replaced and that cannot be done by suturing.

There are certain earmarks which go with these conditions, so that this class of patients is easily recognized at sight. Ptosis of the hepatic flexure of the colon is very distressing. The progress of the intestinal contents in these cases is interfered with seriously, and the result is auto-intoxication. In the work we have been carrying on almost every combination has been found—a firmly attached ascending colon, with a free descending colon, and vice versa, or any part of the colon may be free or attached. The fluid part of the intestinal content is absorbed, and the waste is worked together into a bolus which refuses to pass onward. A patient may have a regular bowel movement and yet in the pockets and pouches formed in the walls of the colon there may be fecal matter so firmly caked that a blunt dissector is necessary to loosen it.

The Roentgen ray is of the greatest value in diagnosticating these conditions; in fact, the diagnosis cannot be made without it. You cannot relieve these patients until you get the viscera to work right. With proper treatment you can replace these organs and the Roentgen ray will aid in checking up the results of the treatment. These patients must be nourished until you can see the retroperitoneal fat. Exercises must be prescribed. The organs cannot be replaced when the chest is narrow or the body is stooped. You must make it possible to have the ribs flare so that the organs can stay in place. The posture is the result of the ptosis. When the ribs slant inward and downward, the liver and stomach are pushed out of place, which in turn interferes with the position of the colon and other viscera. That is an acquired condition. These patients must be fed properly, live properly, exercise, and observe certain rules of posture.

DISCUSSION

DR. PERCY BROWN, Boston: This opens up an interesting field of work. Hertz, of England, wrote an admirable book on constipation. He calls the conditions in the colon described by Dr. Goldthwait a hyperperistalsis, where apparently the succus entericus is formed in increased amount: everything is ready for the waste, but none comes. The so-called "greedy gut," of Hertz is an excessive contraction of the circular muscle fibers of the intestine. When the food finally comes, it is dry and the constriction of these circular fibers squeezes the food and it becomes sapless, hard and scybalous. Dr. Goldthwait's investigations are of the greatest value in directing attention to the probable cause of these conditions and their treatment.

DR. GEORGE E. PFAHLER, Philadelphia: Jordan recently called attention to a kink in the duodenum at its junction with the jejunum which may give rise to a spasmodic condition of the bowel leading to pain, ulcers, and sometimes to adhesions. This condition is easily overlooked, therefore we must make a series of examinations and do considerable fluoroscopic work. I have seen adhesions between the descending and transverse colons and sigmoid cause pain. Sometimes these patients are operated on for appendicitis, and then they fail to get relief from their symptoms. It is a problem just what to do in these cases.

DR. CHARLES L. LEONARD, Philadelphia: In one of these obscure cases I found adhesions and a stricture of the ileum which had caused the patient much pain, and which one surgeon had diagnosed as appendicitis.

DR. F. H. BAETJER, Baltimore: In two cases which I saw the abdominal viscera were in the pelvis, although the splenic flexure was held firmly in its normal position.

DR. C. E. COON, Syracuse, N. Y.: If one can show that there is a retention of the intestinal contents due to malposition of the abdominal viscera, many of these chronic sufferers will be able to get relief.

DR. ROLAND HAMMOND, Providence, R. I.: I have observed many times that while we may not change the position of the viscera by supportive and stimulative treatment, we often relieve the patient of symptoms by simply taking off the strain—the sag. By restoring the normal physiology of an organ by supportive apparatus and stimulating exercises, we are doing all that can be done and practically are effecting a cure.

DR. J. E. GOLDTHWAIT, Boston: In studying these cases we must use our good sense and not see only the colon or stomach, but the human being, with a lot of organs whose balance must be worked out. I believe that we can help these patients. These are human problems, capable of solution by human intelligence, otherwise the scheme of the universe is wrong—and it is not wrong. We cannot give these patients normal ligaments, but we can give them normal function. If we operate to replace an organ, the patient will feel better for a while, and then get much worse again, as food is taken. If there is a special condition for which suture is desirable, all right, but it must be followed up by other treatment. The same is true of the operations done for drainage of the bowel. The short circuiting of the bowel which Lane and others are doing is faulty, in that they see only the colon, and not the other abdominal viscera. It is not only the colon which is causing the mischief. You cannot do very much for the acquired cases. As for the congenital cases, if you will make the patients suffering from acquired conditions as nearly normal as possible, you will gradually lessen the number of congenital cases. It is simply a question of race improvement. If you can get these organs to work right, the patient will get well. Feed your patients judiciously and well; exercise them; train them; teach them how to stand correctly; improve their posture, and you will get good results.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, November 14. Sec., Dr. F. T. Murphy, Brinkley; Homeopathic, Little Rock, November 14. Sec., Dr. P. C. Williams, Texarkana.

CONNECTICUT: Regular, City Hall, New Haven, November 14. Sec., Dr. Charles A. Tuttle, 196 York Street; Homeopathic, Grace Hospital, New Haven, November 14. Sec., Dr. Edwin C. M. Hall, New Haven; Eclectic, Hotel Garde, New Haven, November 14. Sec., Dr. Thomas S. Hodge, 19 Main Street, Torrington.

ILLINOIS: Coliseum Annex, Chicago, October 26-28. Sec., Dr. J. A. Egan, Springfield.

FLORIDA: Regular, Jacksonville, November 7-8. Sec., Dr. J. D. Fernandez.

LOUISIANA: Homeopathic, New Orleans, November 13. Sec., Dr. J. T. Crebbin, 1207 Maison Blanche Building.

MAINE: City Council Rooms, Portland, November 14-15. Sec., Dr. F. W. Searle, 776 Congress Street.

NEVADA: Carson City, November 6. Sec., Dr. S. L. Lee.

TEXAS: Forth Worth, November 28. Sec., Dr. J. D. Mitchell.

WEST VIRGINIA: Hotel Waldo, Clarksburg, November 13-15. Sec., Dr. H. A. Barbee, Point Pleasant.

Texas June Report

Dr. J. D. Mitchell, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 27-29, 1911. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 148, of whom 133 passed, including 4 osteopaths, and 15 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1911)	75
Howard University, Washington, D. C.	(1909)	81.2
Atlanta Medical College	(1895)	75.7
Georgia College of Eclectic Medicine and Surgery	(1911)	81.5
Hering Medical College	(1910)	78.8
Rush Medical College	(1897)	81.5
Louisville Medical College	(1894) 81.5; (1905)	87.5
University of Louisville (1911) 81.2, 81.9, 83.7.		
Tulane University of Louisiana (1908) 83.1; (1911) 84.2, 85.5, 86.9, 89.4.		
Johns Hopkins University	(1911)	93.5
St. Louis College of Physicians and Surgeons	(1911)	78.2
Barnes Medical College	(1905)	75
Dartmouth Medical School	(1901)	84.9
Columbia University, College of Physicians and Surgeons 87; (1905) 89.3.	(1884)	
Bellevue Hospital Medical College	(1865)	75
Meharry Medical College	(1911)	75, 85.6
College of Physicians and Surgeons, Memphis	(1911)	84.6
University of Nashville	(1910)	80.4
Memphis Hospital Medical College (1900) 81.3; (1908) (1910) 75, 77; (1911) 78.7, 80, 83.5, 87, 88.9.		78.3;
University of Tennessee (1911) 79.2, 81.2, 87.7.		
Vanderbilt University	(1892) 75; (1909)	86.3
University of Texas (1910) 82, 87.3; (1911) 80.5, 82.7, 83.5, 83.6, 83.6, 83.7, 83.8, 83.8, 84, 84.4, 84.5, 84.6, 84.6, 84.7, 84.8, 85, 85.3, 85.3, 85.4, 85.6, 85.8, 85.9, 86.2, 86.3, 86.4, 86.5, 86.8, 86.8, 86.8, 86.9, 86.9, 86.9, 87, 87.1, 87.1, 87.4, 87.5, 87.9, 88.1, 88.5, 88.5, 89, 90.3, 90.7.		
Baylor University (1911) 80.8, 81.1, 81.4, 81.5, 81.9, 82, 83.5, 84.2, 85, 85.2.		
Fort Worth University (1911) 77, 78, 78.3, 79.5, 80.9, 81.3, 81.5, 81.9, 82.8, 84.3, 84.4, 84.9, 85.6, 85.7, 86, 86.1, 88, 88, 90.		
Southwestern University Medical College (1911) 75.8, 80.8, 81.2, 81.4, 84, 84.3, 84.5, 85.2, 86, 86.5, 87.2, 87.7, 89.2.		

FAILED

College		
Southern Medical College, Atlanta	(1887)	51
Bennett Medical College	(1910)	62
University of Tennessee	(1911)	71.1
Meharry Medical College (1909) 53.8, 69.2, 72.6; (1911) 50.5, 65.1, 69.3, 70, 70.4, 71.4.		
Chattanooga Medical College	(1897)	53.3
Vanderbilt University	(1911)*	
Fort Worth University	(1910)	63

* Expelled for cheating.

North Carolina June Report

Dr. B. K. Hays, secretary of the North Carolina State Board of Medical Examiners, reports the written examination held at Charlotte, June 14, 1911. The number of subjects examined in was 14; percentage required to pass 80, and not less than 35 in any one branch. The total number of candidates examined was 123, of whom 92 passed and 31 failed. Ten candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University, Washington	(1910)	87.8
George Washington University	(1910)	88.1
Atlanta College of Physicians and Surgeons	(1911)	86.4
Atlanta School of Medicine	(1911)	81.1
Kentucky University	(1904)*	
University of Louisville	(1901)*	
Tulane University of Louisiana	(1911)*; (1911) 81.1, 88, 91.6	
University of Maryland (1879)*; (1909) 80; (1910) 83.1, 81.9; (1911) 80, 82.8, 83.3, 84.8, 87.6, 88.6, 93.4.		
Johns Hopkins University	(1908)	89.4
Maryland Medical College	(1911)	80
University and Bellevue Hospital Medical College	(1907)*; (1908)*	
Columbia University, Coll. of Phys. and Surgs.	(1910)	80.6
North Carolina Medical College (1910) 80; (1911) 80, 80, 80, 80, 80, 80, 80.1, 81.4, 82, 82, 82.6, 83.3, 83.3, 83.7, 85.3, 85.3, 87.7, 88.6, 88.7, 91.6, 93.8.		
Leonard Medical School	(1911) 80, 80, 81.3, 82.6	
University of Pennsylvania (1911) 86, 87, 90, 90.3, 92, 92.3, 94, 94.3, 95.3.		
Jefferson Medical College	(1904)*; (1911) 81, 84.6, 87.4	
Medical Coll. of the State of S. Car.	(1910) 85; (1911)	85.4
University of Tennessee	(1911) 80, 80.7	
Vanderbilt University	(1901)*	
University of the South	(1903)*	
University of Nashville	(1911)	87.7
University College of Medicine, Richmond (1903)*; (1910) 80; (1911) 80, 80, 81.1, 82.5, 84, 85.1, 85.6, 86.8, 88, 88.6, 89.8, 90, 90.8, 90.8.		
Medical College of Virginia	(1908) 82.8; (1911) 80, 85.8, 86	

FAILED

College	Year Grad.	Total No. Examined.
Atlanta College of Physicians and Surgeons	(1911)	1
Atlanta School of Medicine	(1910)	1
Chicago College of Medicine and Surgery	(1910)	1
University of Louisville	(1908)†	1
College of Physicians and Surgeons, Baltimore	(1910)	1
College of Physicians and Surgeons, Boston	(1909)	1
University of Maryland	(1904); (1907); (1910); (1911)‡	4
North Carolina Medical College	(1911)	1
Leonard Medical School	(2, 1910) (6, 1911)	8
Chattanooga Medical College	(1908)	1
Tennessee Med. Coll.	(1904); (1908); (1909); (2, 1911)†	5
University of West Tennessee	(1910)	1
Knoxville Medical College	(1903)	1
University College of Medicine, Richmond	(1911)	2
Medical College of Virginia	(1910)	2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Medical College of Georgia	(1907)	Georgia
Atlanta College of Physicians and Surgeons	(1906)	Georgia
Tulane University of Louisiana	(1908)	Virginia
College of Physicians and Surgeons, Chicago	(1904)	Wisconsin
Baltimore Medical College	(1902)	Virginia
John Hopkins University	(1906)	Maryland
University of Pennsylvania	(1902)	New York
Jefferson Medical College	(1903) New Jersey; (1910)	S. Carolina
Medical College of Virginia	(1909)	Virginia

* Took oral examination.
† Withdrew.
‡ Expelled from examination.

Indiana July Report

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, July 11-13, 1911. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 107, of whom 100 passed, including one osteopath, and 7 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale University	(1888)	88.9
George Washington University	(1910)	84
Northwestern University Medical School (1910) 81, 86.5; (1911) 80.6, 83.1.		
Bennett Medical College	(1911)	82.9
Chicago College of Medicine and Surgery (1911) 80.1, 80.8, 87.9.		
Rush Medical College	(1897) 76.1; (1911)	86.6
Medical College of Indiana	(1890)	75
Indiana University (1911) 75.8, 76.1, 77.1, 77.7, 77.9, 78.7, 79.1, 79.1, 79.3, 79.4, 80.1, 80.1, 80.8, 81.2, 81.2, 81.7, 81.7, 81.9, 81.9, 82, 82.2, 82.5, 82.7, 83, 83.1, 83.5, 83.5, 83.6, 83.7, 83.9, 84.1, 84.2, 84.3, 84.6, 84.9, 84.9, 85.2, 85.3, 85.7, 85.9, 86.4, 86.6, 86.7, 86.7, 88.1, 88.5, 89, 89.6, 90, 90.2, 90.4, 94.7.		
University of Louisville (1906) 77; (1910) 76.6; (1911) 75, 76.7, 77, 77.8, 79.2, 82, 82.1, 82.4, 82.9, 85.9, 86, 88, 88.8, 89.		
Southwestern Homeopathic Med. College, Louisville	(1910)	75
Harvard Medical School	(1911)	83.4
Kansas City Hahnemann Medical College	(1911)	82.6
Starling-Ohio Medical College	(1911)	84.2
Cleveland Homeopathic Medical College	(1903)	75.2
Eclectic Medical College, Cincinnati (1911) 75, 78.2, 78.3.		
Ohio-Miami Medical College	(1910) 83.9; (1911) 82.2, 86.4	

Medico-Chirurgical College, Philadelphia	(1905)	85
Jefferson Medical College	(1910) 89.9; (1911)	84.5, 84.7
University of Virginia	(1880)	81.5
Marquette University	(1911)	83
University of Naples, Italy	(1906)	81.4

FAILED

Indiana University	(1910) 53.2; (1911)	65.5
University of Louisville	(1910) 66.8, 69.1; (1911)	67, 71.9
Eclectic Medical College, Cincinnati	(1911)	73.2

Indiana Reciprocity Report

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports that twenty-five candidates have been licensed through reciprocity since January 1, 1911. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1906)	Illinois
American Medical Missionary College	(1909)	Michigan
Rush Medical College	(1906)	Ohio
Chicago College of Med. and Surgery	(1902) (3, 1909)	Illinois
Coll. of Phys. and Surgs., Chicago	(1905) (2, 1908)	(1909) Illinois
Indiana University	(1909)	Colorado
Hospital College of Medicine, Louisville	(1906)	Kentucky
Univ. of Mich., Dept. of Med. and Surg.	(1908) (2, 1909)	Michigan
Detroit College of Medicine	(1908)	Michigan
University of Michigan, Homeopathic College	(1903)	New York
University of Maryland	(1898)	Maryland
Ensworth Medical College	(1896)	Missouri
Cleveland College of Physicians and Surgeons	(1909)	Ohio
Cleveland Homeopathic Medical College	(1909)	Ohio
Western Reserve University	(1909)	Ohio
Ohio Medical University	(1905)	Ohio
Cleveland University of Medicine and Surgery	(1897)	Ohio

Massachusetts July Report

Dr. Edwin B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at the State House, Boston, July 11-13, 1911. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 147, of whom 94 passed, including 11 osteopaths and 2 non-graduates, and 53 failed, including 14 osteopaths and 11 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1911)	81.5
American Medical Missionary College	(1910)	75
Baltimore Medical College	(1909) 76.2; (1911) 75, 76, 77, 80.9	
Baltimore University	(1906)	75.7
Maryland Medical College	(1906) 75; (1910)	75
Tufts College Medical School	(1910) 75; (1911) 75, 75, 75, 75, 75, 75, 75.2, 75.3, 76, 76.4, 77.6, 77.9, 78, 78.5, 78.5, 78.7, 79.3, 80, 80.1, 80.5, 81, 87.7.	
Harvard Medical School	(1909) 76.7, 78.2, 78.3, 79.8; (1910) 77.9, 78.4; (1911) 75, 75, 75.1, 75.2, 75.8, 76.2, 76.2, 77.2, 77.2, 77.2, 77.5, 77.5, 77.7, 77.7, 77.8, 78.3, 78.4, 78.6, 79.9, 80.2, 80.5, 81, 81.5.	
Boston University	(1911) 75, 75, 75, 76.2, 76.6, 77.5, 78.2, 78.4, 78.7, 81.	
University of Michigan, Dept. of Med. and Surg.	(1904)	75
Columbia University, Coll. of Phys. and Surgs.	(1900)	75
Long Island College Hospital	(1911)	80.8
University of Vermont	(1909) 75, 75; (1910) 75; (1911)	75
University of Naples, Italy	(1909)	75

FAILED

Kentucky University	(1904)	67.7
Maryland Medical College	(1910)	69.7
College of Physicians and Surgeons, Baltimore	(1910)	65.5
Baltimore Medical College	(1908)*	51.2
College of Physicians and Surgeons, Boston	(1908) 64.5, 67; (1909) 69.4; (1910) 69.2, 71.4; (1911) 65.2, 65.5, 66.7, 70.4, 71.2.	
Boston University	(1911)	66.
Tufts College Medical School	(1911) 65.3, 69, 71.2, 71.2, 71.4	
Harvard Medical School	(1911)	70.8
University of the South	(1908)	46.4
University of Vermont	(1894)	49.2
University College of Medicine, Richmond	(1907)	70.2
Laval University, Quebec	(1904) 70.1; (1911)	60.9, 64.6
Tiflis Medical College, Russia	(1878)	1.3

* A statement from the college says this candidate did not graduate.

Utah July Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 5-6, 1911. The number of subjects examined in was 22; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1911)	86.4, 88.4
College of Physicians and Surgeons, Chicago	(1911)	82.8
Keokuk Medical Coll. of Phys. and Surgs.	(1905)	79.3
College of Physicians and Surgeons, Baltimore	(1911)	85.5

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Chi. Coll. of Med. and Surg.	(1908) Colorado; (1910)	Illinois
Illinois Medical College	(1909)	Illinois
State University of Iowa, College of Medicine	(1903)	Iowa
State University of Iowa, Homeopathic College	(1908)	Iowa
University of Michigan, Homeopathic Dept.	(1909)	Michigan
Columbus Medical College	(1889)	Missouri
Jefferson Medical College	(1908)	New York

California August Report

Dr. Charles L. Tisdale, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, August 1-4, 1911. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 163, of whom 127 passed, including 23 osteopaths, and 36 failed, including 15 osteopaths and 1 chiropractic. Two other candidates were licensed on the basis of honorable discharge from the U. S. Services. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of California	(1911) 78.9, 82.1, 85.1, 85.2, 85.8, 85.8, 86.5, 86.9, 90.4.	
College of Physicians and Surgeons, San Francisco	(1906) 75; (1909) 75, 75.6; (1911) 75.4, 77.3, 84.6, 84.9, 85.9.	
Hahnemann Medical College of the Pacific	(1911) 77, 78.5, 82.5, 83.3, 84.1, 88.2.	
California Eclectic Medical College	(1906)	77.3
College of Physicians and Surgeons, Los Angeles	(1908) 75; (1911) 75, 77.9, 80.7, 81.3, 84.	
Cooper Medical College	(1910) 79.9, 81.1, 82.1; (1911) 81.5, 82.2, 84.1, 84.2, 86.1, 86.1, 86.2, 86.8, 87, 87.1, 87.5, 87.5, 87.7, 87.7, 87.9, 89, 89, 89.6, 89.9, 93.1.	
George Washington University	(1908)	75
Georgetown University	(1911)	84.6, 85.7
Atlanta College of Physicians and Surgeons	(1899)	76.9
Rush Medical College	(1882) 84.9; (1897) 91.2; (1899) 93.8; (1900) 82.8, 84.2; (1909) 90.6.	
Northwestern University Medical School	(1904) 77.6; (1909) 84.1; (1911) 79.1, 82.6, 90.4.	
College of Physicians and Surgeons, Chicago	(1894) 81.1; (1897) 80; (1909) 90.6; (1902) 81.4; (1910) 78.8.	
State University of Iowa, Homeopathic College	(1893)	75
Baltimore Medical College	(1896)	89
Johns Hopkins University	(1908) 85.8; (1911)	83.3, 89.9
Harvard Medical School	(1909) 86.5; (1910) 86.7; (1911)	80.7
Univ. of Mich., Dept. of Med. and Surg.	(1910) 78.6; (1911)	87.3
Missouri Medical College	(1896)	80
Ensworth Medical College	(1908)	84.6
St. Louis University	(1911)	77.2, 77
Washington University, St. Louis	(1897)	82.3
Columbia Univ. Coll. of Phys. and Surgs.	(1896) 81.3; (1909)	90.2
New York University Medical College	(1893)	84.6
Long Island College Hospital	(1898)	76.1
Cornell University Medical College	(1911)	81.4
Miami Medical College	(1908)	79.2
Western Reserve University	(1902)	75.7
Ohio Medical University	(1898)	84.8
University of Pennsylvania	(1909) 80.6; (1911)	86.6
University of Pittsburg	(1910)	83.7
Medico-Chirurgical College, Philadelphia	(1911)	77.4
Woman's Medical College of Pennsylvania	(1910)	83.3
University of Texas	(1910)	75
Trinity Medical College, Ontario	(1898)	80
Society of Apothecaries, London*	(1900)	80

FAILED

College of Physicians and Surgeons, Los Angeles	(1911)	70.1
Coll. of Phys. and Surgs., San Francisco	(1902) 67.1; (1911)	63.7
College of Physicians and Surgeons, Chicago	(1906)	69.4
Rush Medical College	(1884)	68.1
Northwestern University Woman's Med. School	(1881)†	75.8
College of Physicians and Surgeons, Keokuk	(1897)	66.3
Kentucky School of Medicine, Louisville	(1891)†	76.3
Louisville National Medical College	(1889)	33.4
Coll. of Phys. and Surgs., Baltimore	(1888) 63.7; (1890)	66.7
St. Louis University	(1906)	63.4
Syracuse University	(1908)	71.1
Pulte Medical College	(1894)	72.3
University of Wooster, Cleveland	(1889)	25.1
Cleveland Medical College, Homeopathic	(1892)	46.1
Hahnemann Medical College, Philadelphia	(1909)	61.7
University of Pennsylvania	(1911)	71.6
University of Naples, Italy	(1903)	51.3
University of Athens, Greece	(1902)	65.5

* Not a medical school, but a licensing body.
† Fell below 60 in one or more branches.

Book Notices

REPORT OF THE VICE COMMISSION OF MINNEAPOLIS TO HIS HONOR, JAMES C. HAYNES, MAYOR. Paper. Pp. 134. 1911.

This report, while not so exhaustive as the report of the Chicago Vice Commission, is yet a valuable contribution to the study of the vexing question of the regulation of vice in our large cities. The fact that Minneapolis under the present city administration is making a sincere effort to enforce the law and to do away with semi-official police regulation of vice, adds to the interest of this report. Quotations from letters from mayors, chiefs of police and others in American and European cities, appear throughout the report. The recommendation of the commission includes suggestions on law enforcement, increased police vigilance, cooperation of citizens, regulation of hotels, lodging-houses, etc. Of special interest are the recommendations, contained in paragraph V of the final sections of the report, in the interests of public health and safety. After recommending the establishment of hospital facilities for the treatment of specific cases, the commission recommends cooperation with the Hennepin County Medical Society and a careful study of the laws in various European nations and in other states, on such subjects as physical examination as a prerequisite to marriage, reporting of specific diseases, punishment for the wilful and negligent transmission of such diseases, compulsory methods for the prevention of infant blindness, and most important, the broadening of the medical practice acts so that the state board of medical examiners shall be given sufficient power and funds to control the quacks specializing in specific diseases. As only three of the fifteen members are physicians, and as the commission includes all professions and classes, this recommendation is particularly significant of the public realization of the importance of the work of the state board of examiners. This report cannot be overlooked by any one interested in the important question of vice regulation in our large cities.

DIGEST AND COMMENTS ON THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA (EIGHTH DECENNIAL REVISION) AND THE NATIONAL FORMULARY (THIRD EDITION) FOR THE CALENDAR YEAR ENDING DEC. 31, 1908. By Murray Galt Motter and Martin I. Wilbert. Hyg. Lab. Bull. 75, U. S. P. H. and M.-H. S., Treasury Department, April, 1911. Paper. Pp. 564. Washington: Government Printing Office, 1911.

This bulletin is the fourth of the series and represents a comprehensive review of medical and pharmaceutic literature for the year 1908. While of interest primarily as a reflection of the work done in connection with pharmacopeial revision, these bulletins also serve to indicate the nature and kind of remedies that are being actively discussed by physicians in different parts of the world. It would appear, therefore, that to the physician who is desirous of securing reliable information regarding the remedies he is using, this bulletin will prove to be a mine of information. Not the least interesting of the several truths that are evidenced is the fact that the really active and efficient drugs are universally used not alone by regular practitioners but also by the followers of sectarian teachings or "pathies." On the other hand, it is evident that the literature relating to the use of many of the less well-established drugs is based on observations that are so unreliable, or at least questionable, that the mockery of their continuance as official articles must be apparent to every well-trained medical man.

EDUCATION AND PREVENTIVE MEDICINE. By N. E. Hitman, Ph.D., M.D. Paper. Price, 25 cents. Pp. 73. New York: Lemcke & Buechner, 1911.

"Great as has been the progress of civilization since the early centuries, there is no advance which compares in its influence on the happiness of mankind with the increased power to lessen physical suffering from disease and accident and to control the spread of pestilence." These are the opening words of this essay, originally printed in the *Columbia University Quarterly* for June, 1908, and now reprinted on account of the demand following an exhausted first edition. This is one of the best of many recent contributions on this subject, and the reprint, undoubtedly, will receive a wide circulation. Many charts and diagrams illustrate the text and a well-selected bibliography appears in the appendix.

DIE RÖNTGENSTRAHLEN IN DER GYNÄKOLOGIE MIT EINEM AUSBLICK AUF IHREN KÜNFTIGEN WERT FÜR SOZIALE UND SEXUELLE FRAGEN. Von Dr. Manfred Fraenkel, Charlottenburg. Paper. Price, 7.50 marks. Pp. 235, with 46 illustrations. Berlin: Richard Schoetz, Wilhelmstrasse 10, 1911.

This book contains a complete consideration of the subject of *x*-ray application in obstetrics and gynecology. The work is not only carefully elaborated with respect to every phase of the theme, but also includes a bibliography of the German and French literature. The study begins with a description of animal experimentation, especial reference being given to the atrophic influence of the rays on the ovary. The author then takes up what he considers a rational use of the Roentgen ray in gynecology, applying it with favorable results in such conditions as myomata, menorrhagia and metrorrhagia, dysmenorrhea and associated nervous conditions and endometritis of the hemorrhagic type. Application of the ray in carcinoma is discussed at length in a separate chapter, wherein the author claims certain rather indefinite advantages, particularly in the inoperable type.

The technic of application is described in detail, with abundant illustrations, Fraenkel placing much stress on the method of application as essential to securing desirable results.

In the use of the ray in pregnancy the danger of abortion is carefully pointed out. This is thought to be due to the influence of the rays on the syncytial elements of the placenta whereby this cell structure is destroyed or inhibited in its growth with a resultant separation. The danger of such a change is not, however, so great as has been claimed by certain investigators. The value of the ray in differential diagnosis, in differentiating uterine from extra-uterine pregnancy, in revealing twin pregnancy, etc., is brought out in detail. Fraenkel asserts also that "Roentgen examination" is of definite use in determining the probability of eventual complications where pregnancy coexists with tumors.

A TEXT-BOOK OF CHEMISTRY. For Students and Practitioners of Medicine, Pharmacy and Dentistry. By Edward Curtis Hill, M.S., M.D., Medical Analyst and Microscopist. Second Edition. Cloth. Price, $3.25. Pp. 659, with 114 illustrations. Philadelphia: F. A. Davis Co., 1911.

This is the second edition of this text and covers the same ground, but a little more fully, than the first edition. The scope of the book may best be understood from the parts into which the author has divided the material, viz.: "Medical Physics," "Chemical Philosophy," "Inorganic Chemistry," "The Carbon Compounds," "Analysis," "Incompatibility," "Sanitary Chemistry," "Toxicology," "Physiologic and Pathologic Chemistry," and "Clinical Chemistry." The text is intended for students and practitioners of medicines, pharmacy and dentistry, and is arranged and written with that end in view. None of the subjects taken up is considered in great detail, but all are covered so as to give a smattering of the various subjects, corresponding to the brief courses in chemistry given in many medical, dental and even pharmaceutical schools. The appearance in this edition of a chapter on the composition of proprietary remedies is commendable. Next to knowing the fundamentals of chemistry, the knowledge of the chemical composition of medicinal preparations is essential alike to physician, pharmacist and dentist to a scientific or rational pursuance of their several professions.

REMINISCENSES OF LINDA RICHARDS, AMERICA'S FIRST TRAINED NURSE. Cloth. Price, $1 net. Pp. 121. Boston: Whitcomb & Barrows, 1911.

In this little book Miss Richards gives an account of the early days of trained nursing in this country and the establishment of training schools for nurses in connection with general hospitals, especially in New England, and the hospitals of Boston. Miss Richards' experiences have been varied, and she describes them in an interesting way. Especially fascinating is her story of her work in a missionary hospital in Japan. The training school which she organized there was at first under the control of the medical missionaries but later passed entirely into Japanese hands. Its graduates, she states, practically organized the Japanese Red Cross, and did good service in the Russo-Japanese war. The book should be of interest not only to nurses but also to physicians, especially those interested in hospital management.

Medicolegal

Constitutionality of Laws Prohibiting Discharge of Sewage Into Streams

(Town of Shelby vs. Cleveland Mill and Power Co. (N. C.), 71 S. E. R. 218)

The Supreme Court of North Carolina says that the defendant contended, as a matter of law, that it could not be restrained from emptying its raw sewage into the river some miles above the intake of the town's waterworks system, because that, prior to the enactment of the statute forbidding it, it had acquired what is called a prescriptive right to do so; that is, had a right acquired by over twenty years' continuous usage, and that consequently the statute, if it was ever intended to apply to such a case, was void to the extent that it undertook to deprive the defendant of a valuable property right without making compensation therefor.

There are authorities to the effect that, as against a private individual lower down on the stream, the right to pollute it to a greater extent than is permissible at common law may be acquired by prescription (long usage) by an upper riparian owner. But the right which the state was seeking to enforce through the statute in question was a public right—a right to protect the health of the people of the state. As against such public rights, prescription cannot run. There is no such thing as a prescriptive right to maintain a public nuisance. It followed that the defendant could not acquire any right by prescription, or otherwise, which would prevent the general assembly of the state, at any time, from exercising its police power to regulate the discharge of sewage into the river.

The issue attempted to be raised by the pleadings that the stream was not dangerously polluted by the raw sewage poured into it from a large mill settlement, working hundreds of operatives, could be of no avail to the defendant. That was a matter for the judgment of the legislature. Such legislation is preventive, and to limit it to cases in which actual injury is shown to have occurred would be to deprive it of its most effective force. To be of value, such laws must be able to restrain acts which have a tendency to produce public injury.

The second proposition of the defendant, that the right to drain its raw sewage into the river could not be taken from it without compensation, necessarily fell with the first. As the defendant could acquire no vested right of the character claimed, there was no taking of property for a public use, and nothing to compensate the defendant for. The state took no right from the defendant, but only described the conditions on which it might use the river for its private purposes.

Notice to Physician Not Notice to Company

(Lumpkin vs. Louisville & Nashville Railroad Co. (Ga.), 70 S. E. R. 1101)

The Supreme Court of Georgia holds that the mere allegation of notice to a physician, employed by a railroad company to treat injured persons, of the filing of a suit for damages, would not alone suffice to show notice to the company; it not appearing that dealing with litigation, or settlements, or the receipt of such notice, was a matter within the scope of the physician's employment. Moreover, special allegations of the petition in this case, by which it was sought to charge that the physician was the agent of the railroad company, whose knowledge would affect the company with notice, were not sufficient for that purpose.

City and Not State Must Bear Expenses of Quarantine

(City of Geneva vs. State (N. Y.), 128 N. Y. S. 470)

The Court of Claims of New York holds that, a theatrical troupe containing a case of small-pox having come to the city, the state department of health having been notified and the secretary of the State Board of Health having advised vaccination and keeping all exposed persons under strict observation until it proved successful, and a medical officer of the board having visited the city and advised quarantine, which was done, that did not make out a case of liability against the state. The city did only what was its bounden duty to do in the premises. It acted as much for its own preservation as for the state's welfare. The statute makes no provision for reimbursement, and the state officials did not even promise to repay. The claim should be dismissed.

Under the public health law, it was the legal duty of the local municipal board of health to report any case of small-pox within the municipality to the State Board of Health. It was also the duty of the municipality to guard against and prevent the introduction of any infectious disease, to enforce the isolation of all persons infected with it or exposed to it, and to provide suitable places for the quarantine and the care and treatment of such persons, and it was provided that these expenses so incurred by the local board of health should be a charge on the municipality. There is no provision in the statute for the reimbursement by the state of individuals or a locality for services rendered or expenses incurred, even under the direction of the State Board of Health.

Increase of Damages by Narcotics Prescribed in Injury Case

(Sumner vs. Kinney (Tex.), 136 S. W. R. 1192)

The Court of Civil Appeals of Texas affirms a judgment for the plaintiff, who brought the action to recover damages for wrongful assault, alleging his injuries to have been serious and that he suffered such pain that he had been obliged to resort to the use of opiates in order to obtain relief therefrom. The evidence showed that the narcotics given were necessary or proper to alleviate existing pain, in accordance with medical direction. The court holds that there was no error in a refusal to instruct the jury that if the plaintiff suffered physical pain and mental anguish, and was compelled to pay out money for medical treatment and the same was the result of the plaintiff's taking to excess narcotics, under the prescription of his medical adviser, or any person, then he would not be entitled to recover anything for the physical pain, mental anguish, and medical treatment, even though the defendant committed an unlawful assault and battery on him. The court says that it is of the opinion that what is done to an injured person in the way of proper medical treatment, applicable to him in his injured state, is attributable to the act causing the injury, as a proximate result thereof.

Good-Will Rights Attach to Practice of Medicine

(Maxwell vs. Sherman (Ala.), 55 So. R. 520)

The Supreme Court of Alabama holds that damages are recoverable for a breach of contract for the sale of the practice and good will of a practicing physician. The court says that while there has been some doubt expressed as to whether the matter of good will, as a property asset, can be applied to the practice of a physician, or other professional man, yet the weight of authority is that the good will of a physician or other professional man is a property asset, subject to disposal, within the limits prescribed, and in the same manner as the good will of any other business, and a breach of the same incurs the same liabilities.

Duty of Carriers to Women Passengers During Menstrual Periods and as to Waiting Rooms—Physical Examinations Cannot be Required

(Brackett vs. Southern Railway Co. (S. C.), 70 S. E. R. 1026)

The Supreme Court of South Carolina affirms a judgment for $200 damages in favor of the plaintiff for exposure during her menstrual period to cold in an unheated waiting-room which resulted in alleged serious and permanent sickness. The court says that it cannot accept the view that the presence of a woman's menstrual period is an abnormal condition, like weakness due to disease, of which the defendant was entitled to special notice. On the contrary, that condition is normal, and must be so regarded and taken notice of by carriers whose duty it is to provide reasonable accommodations for passengers of both sexes. That duty does not extend to making special provision, without notice, for women who are peculiarly delicate or abnormal in their susceptibility to cold in such condition, but it does extend to reasonable consideration and provision for the comfort of healthy women, whose capacity to travel is not materially affected by such condition.

Again, the court says that the public business of carrying passengers is now so controlled by a few persons or corpora-

tions that those who travel must of necessity use their stations and waiting-rooms, and with increasing population the number of persons using these stations is constantly on the increase. The arrangement for the comfort and health of all classes of the general public—women and children, the old and the feeble, the ignorant and inexperienced—are under the exclusive control of the carriers, and it seems but reasonable that they should be held to a very high degree of care in providing at their stations for the safety and comfort of those whom they impliedly invite to use their stations and waiting-rooms.

It was not error for the trial court to refuse to require the plaintiff to submit to a physical examination by disinterested physicians.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Yale Medical Journal, New Haven

June, XVIII, No. 1, pp. 1-112

1 Salvarsan in Syphilis. C. S. Stern, Hartford, Conn.
2 *Acute Pyelitis in Infants. W. G. Murphy, Hartford.
3 Treatment of Brain Injuries Associated with Fracture of Base of Skull. P. Watermann, Hartford.
4 *Case of Dermatomyositis. G. Blumer, New Haven.
5 Case of Metastatic Ophthalmitis in Puerperal Sepsis. E. M. Blake.

2. Pyelitis in Infants.—The prognosis of pyelitis, Murphy says, depends on the cause of the infection and the time it has continued. In uncomplicated cases the results are generally good. If secondary changes in the kidney have occurred the results are unfavorable. Much depends on the early recognition of the disease.

4. Case of Dermatomyositis.—Two years ago Blumer's patient had a mild att : of diphtheria. Two weeks after recovery from the diphtheria she had an attack of jaundice, and in the next few months seven attacks of tonsillitis. After one of the attacks of tonsillitis she had an attack similar to the present one, but confined to the legs below the knees. She had muscle pain, superficial edema and a hemorrhagic eruption over the affected parts. There was swelling of the small joints of the hands with this attack. The present illness is of two months' duration. She first had a bad attack of tonsillitis affecting both tonsils. There was no suppuration and she had home treatment. Soon after recovery she developed soreness of the muscles of the legs so that she was unable to walk. There was marked edema of the overlying skin, and many purpuric spots. Later the arms were similarly involved, and still later the face. There were spots like hives on the arms. There was no fever or at most slight fever at the onset. The face at the onset and long before edema appeared was intensely red for a day or two. Anorexia and constipation were present. When seen the main complaint was the soreness in the muscles and the swelling of the body.

This patient presented the cardinal features of dermatomyositis, pain in the muscles associated with induration and tenderness, edema of the overlying skin and dermatitis on the face in the form of a transient erythema, and on the legs as petechiæ. Points of interest in connection with the case are the following: 1. The family and personal history of asthma and other conditions suggesting hypersusceptibility to horse serum. Meltzer considers asthma a phenomenon of anaphylaxis. What relation may have existed between hypersusceptibility and the dermatomyositis is conjectural. 2. The recurrence of the disease, if the history is to be relied on. Apparently there was a mild attack limited to the legs before the more severe one. 3. The occurrence of both attacks after tonsillitis. In a good many instances this disease has followed infections.

Journal of Indiana State Medical Association, Ft. Wayne

September, IV, No. 9, pp. 359-418

6 Brain Tumor: Study of Twenty-Five Cases. G. W. McCaskey, Ft. Wayne, Ind.
7 Two Cases of Cancer of Prostate. J. Y. Welborn, Evansville, Ind.

Detroit Medical Journal

September, XI, No. 9, pp. 307-344

8 *Two Cases of Atypical Tabes. C. W. Hitchcock, Detroit.
9 Fibrinous Rhinitis. W. Chaney, Detroit.
10 Surgery of Soft Tissues of Hand. H. B. Garner, Detroit.

8. Atypical Tabes.—The unusual feature in the first case cited by Hitchcock is the persistence of the knee-jerk in so well-developed a case of tabes. In the second case, the characteristic pains, the Rombergism, the pedal ataxia, the slight impairment of gait, the sensory changes, the characteristic pupils, all point to a tabes, which, however, has affected the gross appearance of the patient uncommonly little.

Ophthalmic Record, Chicago

September, XX, No. 9, pp. 545-598

11 Sphero-Cylinder Trial Lenses. J. N. Rhoads, Philadelphia.
12 Position of Eye the Element of Safety in East Indian Extraction in Capsule. M. Standish, Boston.

Boston Medical Journal

October 5, CLXV, No. 14, pp. 505-544

13 Salvarsan from Clinical Standpoint. H. P. Towle, Boston.
14 Parasitology of Syphilis. H. C. Ernst, Jamaica Plain.
15 Chemistry of Salvarsan. W. F. Boos, Jamaica Plain.
16 Preparation of Salvarsan for Injection. J. Godsoe, Boston.
17 Clinical Observations on Use of Salvarsan, with Special Reference to Its Administration. H. Cabot, Boston.
18 Personal Impressions of Value of Salvarsan. S. Pollitzer, New York.
19 Personal Experience with Salvarsan. A. Post, Boston.
20 *Frequency of Venereal Diseases. Reply to Dr. Cabot. P. A. Morrow, New York.
21 Reminiscence of My Professional Life. D. W. Cheever, Boston.
22 Prognosis in Infantile Paralysis. B. E. Wood, Boston.

20. Frequency of Venereal Diseases.—In the present organization of our hospital system in this country the notoriously inadequate provisions made for the reception and treatment of venereal patients are held by Morrow to be a disgrace to our civilization. He says that it is recognized by those who are engaged in the campaign for the prevention of venereal diseases that curative treatment, by sterilizing sources of contagion, constitutes one of the most effective measures of prophylaxis. Prompt curative treatment is not only in the interest of the patients themselves, but especially in the interest of others they might infect. But everywhere we are confronted with this situation: there are no special hospitals for this class of diseases; few general hospitals receive them in the early, curable stage; still fewer have special venereal wards; even the dispensary services are not organized with special adaptation to the needs of venereal cases; few have night classes, and working people who go to the dispensary must lose half a day, which often means the sacrifice of their employment. As a consequence, they resort to quacks or the use of nostrums, they are not cured, but go on spreading the seeds of contagion.

Our hospital authorities are most loyal advocates of the policy of silence and concealment which has always served to cover up the enormous extent and dangers of venereal infection. By the system of nomenclature employed in the records all mention of gonorrhea and syphilis is excluded in thousands of cases indubitably of venereal origin, or presumptively so. It would be impossible for a physician, much less a layman, to obtain any correct idea of the amount of venereal morbidity in a general hospital from the examination of its records. It is only in the hospital records of the Army and Navy departments that gonorrhea and syphilis are always entered under their true names. As regards the venereal peril in our civil population, Morrow says that venereal diseases, viewed in their triple significance as a danger to the public health, a peril to the family, and a menace to the vitality, health and physical progress of the race, are the greatest of modern plagues, and that the prophylaxis of these diseases is the most pressing problem of preventive medicine that confronts us at the present day.

Iowa Medical Journal, Des Moines

September, No. 3, pp. 105-148

23 Tubal Sterilization. L. W. Littig, Davenport.
24 Roentgen Diagnosis. R. D. Mason, Omaha, Neb.
25 Prevention of Tuberculosis. C. J. Whalen, Chicago.
26 Glandular Fever. J. H. Darcy, Sioux City.
27 Day at Grand Canyon. A. G. Field, Des Moines.
28 Alcohol in Medicine. W. F. Waugh, Chicago.

Journal of Experimental Medicine, New York

October, XIV, No. 4, pp. 339-444

29 Study of Simultaneous Tracings from the Apex of the Heart and Radial Artery with the Micrograph. A. C. Crehore, New York.
30 Study of Tracings from Region Near Apex of Heart. A. C. Crehore, New York.
31 Distribution and Direction of Motion of Interference Bands of Light Formed by Thin Plates as Thickness of Plate Varies. A. C. Crehore, New York.
32 *Experimental Acute Nephritis: Elimination of Nitrogen and Chlorids as Compared with that of Phenolsulphonephthalein. J. H. Austin and A. B. Eisenbrey, Philadelphia.
33 *Biologic Tests for Adrenalin in Blood, with Observations on Arterial Hypertonus. G. N. Stewart, Cleveland.
34 *Biliary Cirrhosis in Rabbit. M. L. Richardson, Madison.
35 *Optic Thalamus in Relation to Respiration, Circulation, Temperature and the Spleen. E. Sachs, New York.
36 *Method for Quantitative Determination of Bacteria in Feces. H. A. Mattill and P. B. Hawk, Urbana.

32. **Experimental Acute Nephritis.**—The authors found that uranium and cantharidin, in the smallest doses capable of producing a distinct nephritis, tend to increase the elimination of nitrogen, probably by stimulating tissue katabolism. Uranium, cantharidin, and potassium chromate, in larger doses, impair the power of the kidney to eliminate nitrogen; but this may not be evident unless the animal is on a high nitrogen diet, and the impairment, when due to potassium chromate, may not persist more than a day. Small doses of uranium and of cantharidin cause a transient increase of chlorid elimination which corresponds in a general way to the excess of diuresis. Large doses of uranium and of chromate cause a fall, usually transient, in the chlorid elimination. The chlorid elimination may, however, be diminished 40 per cent. for twenty-four hours without evidences of intoxication (vomiting). The anatomic appearance of the kidney varies somewhat with the poison used and greatly with the period of survival after administration of the poison, but bears no definite relation to the nitrogen, chlorid or phenolsulphonephthalein elimination; marked anatomic alteration is compatible with normal elimination of all these substances and with freedom from symptoms of intoxication (vomiting).

The decrease in the elimination of phenolsulphonephthalein, which occurs in uranium, chromate and cantharidin nephritides and which, in a general way, is proportional to the dose of the poison, bears no constant relation to the changes in the nitrogen or chlorid elimination. A marked decrease in the elimination of the phenolsulphonephthalein occurs synchronously, as a rule, with the onset of the symptoms of intoxication (vomiting), and therefore the phenolsulphonephthalein test would seem to be a better indicator of the ability of the kidney to eliminate the toxic substance responsible for the symptoms of renal insufficiency than are either the anatomic changes or the elimination of total nitrogen or of chlorids.

33. **Biologic Tests for Adrenalin in Blood.**—The combination of a biologic test object on which adrenalin causes contraction of smooth muscle (perfused blood-vessels or the uterus in certain conditions) with a biologic test object on which it produces inhibition of contraction of smooth muscle (intestine) Stewart says greatly diminishes the chance of error in testing blood (or other body liquids) for adrenalin. A control experiment with adrenalin solutions should, in general, accompany each observation on the blood. When properly chosen biologic tests are employed, no evidence is obtained of the presence of adrenalin in detectable amount in normal blood taken from the general circulation. In a case of nephritis with albuminuria and persistently high arterial pressure, the pressure was diminished by forced breathing. The washing out of carbon dioxid seemed to be a factor in this diminution as well as the mechanical interference with the circulation. In this case, the administration of large doses of sodium bicarbonate was associated with a marked diminution in the blood-pressure. In another case with persistently high blood-pressure, the drawing off of cerebrospinal fluid caused a distinct diminution in the arterial pressure, presumably by lowering the intracranial pressure. No pressor substance was detected in the cerebrospinal fluid.

34. **Biliary Cirrhosis in Rabbit.**—The statement concerning biliary cirrhosis which is commonly found in text-books on pathology is to the effect that obstruction of the bile duct without infection does not lead to cirrhosis of the liver. Richardson found, however, that ligation of the common bile-duct in the rabbit, without demonstrable succeeding infection, results in a cirrhosis of the liver.

35. **Relation of Optic Thalamus to Respiration.**—Sachs failed to find a center controlling respiration in the optic thalamus. He says that any changes in respiration observed on stimulation are reflex effects. The blood-pressure is not governed by any special center in the thalamus; the changes observed are, as a rule, pressor effects. Changes in pulse-rate do not occur from moderate thalmic excitation. There is no center controlling movements of the spleen; all changes are secondary to blood-pressure changes. The difference in respiratory effects noted on the stimulation of the thalamus and central gray matter are in all probability due to the stimulation of different paths going to the medullary centers. The globus pallidus has an entirely different effect on the respiration from the thalamus and hence is connected with a different part of the medullary center. The nucleus caudatus has no connection with the respiratory or circulatory mechanism. The optic thalamus, nucleus caudatus, and nucleus lenticularis contain no centers which on direct stimulation produce changes in temperature.

36. **Quantitative Determination of Fecal Bacteria.**—From results obtained by Mattill and Hawk it appears that the amount of bacterial nitrogen in the feces is a valuable index to intestinal conditions, and the method described by them is a simple and satisfactory one for making this determination. It involves three serial centrifugalizations of a 2 gm. sample of the fresh feces brought into suspension in 0.2 per cent. hydrochloric acid. The bacterial suspension finally obtained is concentrated and extracted by alcohol, and nitrogen is determined in the precipitated material. The complete data on a given stool can be obtained in about five days, and one operator can take care of three or four stools in duplicate in one day. On an absolutely uniform diet of simple and easily digested food during a period of three to four weeks, the average amount of bacterial nitrogen in two subjects was found to be 53.9 per cent. of the total fecal nitrogen, and this percentage, though higher than that obtained by workers heretofore, is probably more nearly a true value for bacterial nitrogen, because no ether extraction was employed. The average daily amount of dry bacteria, calculated on the basis of the nitrogen values, is 8.27 Gm.

Therapeutic Gazette, Detroit

September 15, XXXV, No. 9, pp. 669-684

37 Modern Surgical Treatment of Non-Strangulated Inguinal Hernia. C. W. Bonney, Philadelphia.
38 Hypodermic Use of Mercury in Treatment of Syphilis. W. D. Bieberbach, Worcester, Mass.
39 Acute Nephritis Following Intravenous Injection of Salvarsan. H. Tucker, Philadelphia.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

October 1, XXXI, No. 19, pp. 455-480

40 *Empyema of Gall-Bladder. B. A. Bobb, Mitchell, S. D.
41 Surgery of Gall-Bladder and Its Accessory Ducts. G. G. Cottam, Sioux Falls, S. D.
42 Treatment of Purulent Pleurisy. N. O. Ramstad, Bismarck, N. D.
43 *Nasal Catarrh, Neuralgias, Headaches and Other Symptoms Arising from Unsuspected Ethmoiditis. F. C. Todd, Minneapolis.

40. **Empyema of Gall-Bladder.**—Bobb does not believe that it is not necessary, as a rule, to remove the gall-bladder in these cases of empyema; drainage, if the mucosa is not all destroyed, being sufficient. He regards all cases of empyema of the gall-bladder as necessarily surgical, and suggests that if more cases of simple cholecystitis were operated on it would save the larger mortality that is obvious in empyema.

43. **Symptoms Due to Unsuspected Ethmoiditis.**—According to Todd it not infrequently happens that the antrum acts as a reservoir for the pus which originates in the ethmoidal or frontal cells, and hence efforts to cure an antrum abscess, without first curing the ethmoidal or frontal sinus abscess, prove futile, while, conversely, the curing of the latter will usually result in cure of the antrum disease without any attention being directed to the antrum itself.

Wisconsin Medical Journal

September 10, No. 4, pp. 183-242

44 *Essentials and Non-Essentials in Physical Diagnosis. R. C. Cabot, Boston.
45 Exophthalmic Goiter (Hyperthyroidism). L. F. Jermain, Milwaukee.
46 Salvarsan in Syphilis. O. H. Foerster, Milwaukee.

44. Abstracted in THE JOURNAL, July 22, 1911, p. 314.

New Orleans Medical and Surgical Journal

October, 64, No. 4, pp. 259-333

47 *Gall-Bladder and Biliary Tract an Available Therapeutic Route to Upper Bowel. R. Matas, New Orleans.
48 Syphilis of Liver. C. L. Eshleman, New Orleans.
49 Case of Extrauterine Pregnancy. H. W. Kostmayer, New Orleans.
50 Recent Advances in Local Anesthesia. C. W. Allen, New Orleans.
51 *Obstinate Pruritus Cured by Excision of External Organs of Generation. C. G. Cole, New Orleans.

47. Abstracted in THE JOURNAL, Jan. 14, 1911, p. 141.

51. **Treatment of Pruritus.**—After all local and constitutional measures had failed to give relief to a woman, 33 years old, Cole removed the clitoris and its prepuce, part of the mons, the labia minora, part of the vestibule, and the integument from the inner aspect of the labia majora. On examination the inner surfaces of the labia majora were found to be whitish in character and the epidermis very much thickened, the labia minora not prominent, and the clitoris was almost completely concealed beneath the prepucial tissues, which were white, indurated and very much thickened. Further from the center of involvement the surface had a reddish, shiny appearance, and some small ulcerative areas were present, with marked manifestation of undue manipulation of the parts excited by unbearable itching. The symptoms were immediately relieved. The wound healed by primary union. Four months have elapsed, with no return of symptoms, and the patient feels much elated with her condition.

Proctologist, St. Louis

September, V, No. 3, pp. 113-172

52 Proctology in Undergraduate Medical School. B. J. Dreyfuss, New York.
53 Proctologic Education in Undergraduate University Medical School. R. H. Barnes, St. Louis.
54 Delimination of Rectum and Its Subdivisions. F. W. Jones, England.

American Journal of Diseases of Children, Chicago

October, II, No. 4, pp. 221-291

55 *Epidemiologic and Etiologic Studies of Acute Poliomyelitis in Pennsylvania. S. G. Dixon, Harrisburg.
56 *Relationship of Gastric to Pancreatic Fat Digestion in Infants. J. P. Sedgwick and F. W. Schultz, Minneapolis.
57 Hippuric Acid in Urine of Normal Breast-Fed Infants. S. Amberg and J. H. M. Knox, Jr., Baltimore.
58 Acid Control of Pylorus in Infants. D. M. Cowie and W. Lyon, Ann Arbor.
59 *Relation of Meat Ingestion to Indicanuria in Children. E. C. Fleischner, San Francisco.
60 *Treatment of Chronic Nephritis in Children by Edebohl's Operation. H. Koplik, New York.

55. **Acute Poliomyelitis in Pennsylvania.**—Out of 773 cases of poliomyelitis studied carefully by the department of health of the state of Pennsylvania, fifty-nine gave a distinct history of exposure to previous cases. Nationality seemed to play no particular part in this disease, the vast majority of those contracting poliomyelitis being American-born. Out of this series of cases 437 were males and 336 were females. But three of the colored race (two males and one female) sickened. In forty-four instances secondary cases developed in the household. Other acute illnesses two months prior to the development of infantile paralysis seemed to show but little influence. Great exposure to heat, cold and dampness was noted in comparatively few instances. A total of thirty patients are reported to have met with some minor accident a short time previous to the onset of poliomyelitis. Overexertion was reported in only twenty-eight cases. In a few instances (thirty-four) evidence of insect bites was noted.

In this series of 733 cases, 142 patients (18.4 per cent.) recovered without paralysis and 294 (71.6 per cent.) recovered with considerable residual paralysis. Housing conditions show that in 149 instances the individual sickened in a large home; in 219 instances in a medium-sized home, and in 164 instances in a small dwelling. When classified with reference to the number of members of the household the tabulation shows two instances in a family of one; thirteen in a family of two; eighty-six in a family of three; 154 in a family of four; 121 in a family of five; ninety-five in a family of six; sixty-two in a family of seven; thirty-three in a family of eight; twenty-three in a family of nine; twenty-three in a family of ten and over. These figures establish the fact that the danger of transmission from one member of the household to another member of the same household is not great. In 289 instances children slept in the same bed-room, only twenty-four contracted the disease.

In nine instances the disease developed in children after having visited communities where this disease was known to be prevalent. In five cases the possibility of transmission through a second individual seemed probable. In many histories rats were reported on the premises. Field mice were frequently found. Unusual insects were reported in eighteen instances.

In examining the blood from acute cases of poliomyelitis in human beings, and also in monkeys in which the disease was produced experimentally, an organism was found different in morphologic characteristics from any heretofore described. Blood-smears being fixed in methyl alcohol for one minute and stained with carbol-thionin, show the organism as a faintly-stained blue rod with regular cell wall about 10 microns long and about 8 microns in width, curved at an angle of 60 to 75 degrees at one end, occasionally at both ends. At times, the curved end is bulbous. Some of the organisms appear to have a very finely granular protoplasm when the highest amplification is employed. They may be discerned by means of a 4 mm. dry objective but their characteristics are much more satisfactorily delineated under the 1/12 oil-immersion lens. They are found free in the serum as well as within the body of the red blood-cell. The organisms do not retain the violet color when stained by the method of Gram but assume the color of the counter stain which, as generally used in this laboratory, is a very dilute solution of carbol-fuchsin.

The bloods examined were from ten different cases of acute poliomyelitis in children, and from thirteen cases of the disease during the acute stage, which had been produced experimentally in as many monkeys. Blood-smears from three normal human beings were carefully examined and although the search for these organisms was diligently made, none was found. Smears were made from the blood of thirteen normal monkeys with negative results. After inoculation with the virus these same monkeys gave positive results. The blood of other normal monkeys gave negative results. Blood-smears were stained with iodin and sulphuric acid in order to test the organisms for cellulose, but no blue stained organisms were seen. Smears from the cords and brains of paralyzed monkeys, and from one human case were examined, but none of the new organisms was found. Filtered virus stained with carbolthionin and by Gram's method showed none of these organisms. Defibrinated blood, three weeks to two months old, from two paralyzed monkeys, showed the forms in increased numbers. Cultures made from the blood of a paralyzed monkey, in blood bouillon, plain bouillon and blood-agar, examined after having been inoculated three weeks, showed the presence of the organism in increased numbers. Dorsett's egg medium was inoculated with the same blood at the same time but the organism was not found in smears from the surface of the medium or from the water of condensation. Experiments on the production of poliomyelitis in monkeys by using this organism are in progress.

56. **Gastric and Pancreatic Fat Digestion in Infants.**—The authors conclude that the neutralization of the fat gastric digestion does not end the function of the gastric lipase of the dog or infant. Whether the effect shown is a summation of, or a relationship between, the actions of the two ferments, preparatory or activating, their experimental results do not permit them to state with certainty. They believe it to be justifiable, however, to conclude that the function of the gastric lipase of the infant is not ended when the gastric contents pass the pylorus and are neutralized in the duodenum.

59. **Meat Ingestion and Indicanuria in Children.**—The following is a brief resumé of the results obtained by Fleischner: With an ordinary diet containing meat once daily, children 6, 9 and 12 years old succeed in digesting their food fairly well without much putrefaction in the intestinal tract. Three-year-old children, on the other hand, with the same diet are much more apt to show indicanuria. The giving of meat twice daily produces in 9- and 12-year-old children practically no change in the amount of intestinal putrefaction. In 6- and even more markedly in 3-year-old children meat given twice daily gives rise to a decided increase in the indicanuria and is a cause of pronounced intestinal putrefaction. As limited as these observations may be, they seem to point to one definite conclusion, and that is that the giving of meat more than once daily to children under 9 years of age is a practice conducive to intestinal putrefaction and indicanuria, and is to be deprecated on account of the harm resulting to the organism from the constant presence of abnormal products of putrefaction.

60. **Treatment of Chronic Nephritis in Children.**—The five cases cited by Koplik seem to have strengthened his belief in the efficacy of this operation.

Journal of Oklahoma State Medical Association, Muskogee

October, IV, No. 5, pp. 173-219

61 Chronic Ulcer of Duodenum. H. Reed, Oklahoma City.
62 Roentgen Ray a Solution of Some Fracture Problems. E. S. Lain, Oklahoma City.
63 Wassermann Reaction: Its Principles and Technic. C. J. Fishman, Oklahoma City.
64 Diagnosis and Treatment of Congenital Syphilis. L. J. Moorman, Oklahoma City.
65 Injuries of Eyeball and Its Appendages. E. F. Davis, Oklahoma City.
66 Scarlet Fever: Etiology of Its Sequelæ. L. E. Andrews, Oklahoma City.
67 Emphysematous Gangrene of Uterus, Bladder and Rectum. J. W. Riley, Oklahoma City.

Maryland Medical Journal, Baltimore

October, 5½, No. 10, pp. 283-308

68 *Neuritis Puerperalis. I. J. Spear, Baltimore.
69 Three Cases Illustrating Less Usual Types of Poliomyelitis. T. A. Williams, Washington, D. C.
70 University Hospital Laboratory Report on Wassermann Reaction. H. J. Maideis, Baltimore.
71 Some Tendencies in Medical Education in United States. L. F. Barker, Baltimore.

68. **Neuritis Puerperalis.**—Two cases are reported by Spear. In the first case there is a history of a very probable multiple neuritis complicating a pregnancy that occurred five years ago. In this attack it is perfectly possible to exclude all forms of exogenous toxemia, trauma, infectious diseases, etc. This woman was desperately ill from her hyperemesis gravidarium, and had a typical multiple neuritis. The institution of the proper treatment for the hyperemesis gravidarium with only slight treatment directed toward the multiple neuritis resulted in a prompt and perfect recovery. In the second case the patient had all the signs and symptoms of a severe case of multiple neuritis, with marked disturbance of memory for recent events, presenting a typical picture of Korsakow's disease. From a very careful inquiry of her surroundings, habits, etc., chronic alcoholism could be excluded absolutely. Korsakow's syndrome can be caused by some other toxin than alcohol.

Mississippi Medical Monthly, Vicksburg

October, XVI, No. 6, pp. 107-126

72 Cause and Treatment of Uterine Hemorrhage. S. A. Eggleston, Lexington.
73 Surgery of Appendix Vermiformis. J. W. Barksdale, Winona.
74 Acute Parenchymatous Nephritis. J. O. Gurney, Tupelo.
75 Several Lists for Obstetric Use. S. Myers, Vicksburg.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

September, XIV, No. 9, pp. 513-576

76 *Bromatotherapy. H. W. Wiley, Washington, D. C.
77 *Dioxydiamidoarsenobenzol (Salvarsan) as Patented Product. F. E. Stewart, Germantown, Pa.
78 Administration of Tuberculin in Pulmonary Tuberculosis. F. N. Robinson, Monrovia, Cal.
79 Practical Hearing Tests. H. O. Reik, Baltimore.
80 *Active Immunization with Respect to Micrococcus Aureus in Animals Completely Pancreatectomized. B. A. Thomas and M. MacPhail, Philadelphia.
81 Spleen and Chronic Constipation and Preliminary Note on Pineal Gland and Corpus Luteum. I. Ott and J. C. Scott, Philadelphia

76 and 77. Abstracted in THE JOURNAL, June 3, 1911, p. 1676.

80. **Active Immunization in Animals.**—Complete extirpation of the pancreas must necessarily result in profound disturbances of metabolism, but it was thought by the authors that notwithstanding such disturbances a very definite relation might still be shown to exist in the diminished resistance which such a pancreatectomized animal would present to bacterial infection. Ten dogs were used in the experiments. No. 1 was used as the index of unity, for obtaining leukocytes and normal serum in the determination of the opsonic indices. Nos. 2 and 3, which were neither pancreatectomized nor inoculated, were used as normal controls. Nos. 4 and 5 were not pancreatectomized, but were inoculated; these they called controls. The remaining five dogs were pancreatectomized. The opsonic indices of all of the ten animals were determined according to Wright's method previous to and five days subsequent to the operations, and thereafter at seven-day intervals for a period of six weeks. The organism used in obtaining the indices and for the preparation of the bacterin was the same strain of *Micrococcus aureus*. In ascertaining the indices, there were counted in each case 100 leukocytes with their bacterial contents.

Five days after the opsonic indices of all animals were determined. Dog 7 died six days after the operation. One pancreatectomized dog, No. 10, was not given an inoculation, but was used as a control. One week subsequent to the operations the remaining pancreatectomized animals, Nos. 6, 8 and 9, and the two controls, Nos. 4 and 5, were inoculated with a sterilized suspension of the *Micrococcus aureus*, the dose in each case being 400,000,000 bacteria. No. 8 died five days after the inoculation, so that in this case also the authors were unable to obtain more than one index. Two more inoculations of the sterilized bacterin were given at seven-day intervals, each dose being increased by 200,000,000 and 400,000,000, respectively, and the opsonic indices determined after the time the positive phase should have been reached. Four weeks after the operations and one week subsequent to the last inoculation of the sterilized bacterin, two injections of live cocci were given in respective doses of 150,000,000 and 225,000,000 at seven-day intervals. The authors were unable to give more than two inoculations of the live organisms to the pancreatectomized animals, as they died six weeks after the operations; but the controls, Nos. 4 and 5, received seven inoculations in all, of the live bacterin, at seven-day intervals, each dose being increased by 75,000,000, thus bringing the last dose up to 600,000,000. Subsequent autopsy in the operative cases proved that the entire pancreas had been removed in each one. Urine was collected and tested for sugar with positive results; tests for acetone also were positive.

They have drawn several conclusions: 1. The gradually declining indices of the pancreatectomized dogs, inoculated and non-inoculated, as contrasted with the practically even index curves of the normal controls, show a diminution in the mechanism for the production of immunity, since the index curves of the two dogs which received bacterins show no pronounced difference from that of the animal which did not. 2. A comparison of this almost regular decline with the gradual rise of the indices of the non-pancreatectomized, but inoculated, animals would seem to indicate that the production of this protective mechanism depends, at least in part, on the functional activity of the pancreas. 3. The fact that the index curve in dog 10, which was not inoculated, differs so slightly from those of the pancreatectomized and inoculated dogs would furnish an explanation, in part, of the liability of diabetics to staphylococcus infection, as evidenced by the frequency of boils and carbuncles in such cases. A study of the curves in animals 4 and 5 would seem to show that in a normal healthy animal a more pronounced immunity may be obtained by the use of a sterilized bacterin.

Journal of Arkansas Medical Society, Little Rock

August, VIII, No. 3, pp. 67-101

82 *Correlation of Diseases of Kidneys, Heart, Digestive Tract and Organs of Respiration. E. G. Epler, Fort Smith.
83 *Syphilis and Problems in Its Prevention. E. Myers, Fort Smith.

84 Treatment of Syphilis with Salvarsan. H. P. Collings, Hot Springs.
85 *Symmetrical Gangrene. W. R. Bathurst, Little Rock.
86 Treatment of Syphilis with Salvarsan. L. O. Thompson, Little Rock.

82, 83 and 85. Abstracted in THE JOURNAL, July 8, 1911, pp. 156 and 157.

Archives of Pediatrics, New York

September, XXVIII, No. 9, pp. 721-800

87 *Ready Method of Calculating Milk Formulas of Various Percentages and Caloric Value of Same. L. E. Holt, New York.
88 *Hospitals for Care of Infants and Children and Methods of Prevention of Infection. H. Koplik, New York.
89 Ward Improvements; Crib Warmer; Management of Carriers; Prevention of Epidemics. W. P. Northrup, New York.
90 Ward Problems. F. Huber, New York.
91 Management of Pediatric Service in General Hospitals. J. F. Bell, Englewood, N. J.
92 *Surgical Management of Acute Abscesses of Lymph-Nodes in Infancy. T. S. Southworth, New York.
93 *Treatment of Furunculosis in Children by Bacterial Vaccines. C. L. McDonald, Cleveland, Ohio.

87. **Method of Calculating Milk Formulas.**—Starting with the belief that in practice it is unnecessary that the percentage of fat should ever be more than twice that of the protein, Holt has found it easy to construct a table by which a series of formulas can be obtained in which the fat may be as high as twice the protein, and as low as only a little more than one-fourth the protein, with all the variations between these extreme limits. The first step is to secure milks which contain different fat percentages: 7 per cent. of fat, 6 per cent., 5, 4, 3, 2 and 1 per cent. How this is done from 1 quart bottle of milk which has 4 per cent. of fat, and one which has 5 per cent. of fat is shown in the following table:

1 ounce milk sugar by weight in 20-ounce mixture adds 5 per cent.
1 ounce milk sugar by volume in 20-ounce mixture adds about 3 per cent.
1 even tablespoonful in 20-ounce mixture adds 1.75 per cent.

Every ounce of 7 per cent. milk in a 20-ounce mixture will add 1/20 of 7 per cent., or .35 per cent. of fat; every ounce of 6 per cent. milk will add .30 fat; every ounce of 5 per cent. milk will add .25 fat, etc. Every ounce of each of these milks will also carry with it .175 per cent. of protein and .225 of sugar. In the case of a young infant for whom .70 per cent. of protein is proper, 4 ounces of milk in 20 ounces of food will be required. If this 4 ounces is of 7 per cent. milk the food will have 1.40 per cent. of fat; if it is 6 per cent. milk the food will have 1.20 fat; if 5 per cent. 1.00, etc. To raise both the fat and the protein proportionally the next increase would be to use 5 ounces of 7 per cent. milk in 20 ounces of food; later 6 ounces in 20; 7 ounces in 20, etc., etc.

To raise the protein above .70 but without increasing the fat, this can be done by using 1 ounce more of milk in 20, but of the series containing the next lower fat; e. g., 5 ounces of 6 per cent.; 6 ounces of 5 per cent.; 7 ounces of 4 per cent., and 9 ounces of 3 per cent., all give approximately the same fat while the protein is raised successively from .70 to .85, 1.05, 1.20 and 1.60 per cent. In calculating the sugar percentage it is necessary only to see how much must be added to that already in the milk to bring it up to the percentage desired, remembering that:

From 4 Per Cent. Milk.	From 5 Per Cent. Milk.
To obtain 7 per cent milk use upper 16 oz.	upper 20 oz.
To obtain 6 per cent. milk use upper 20 oz.	upper 24 oz.
To obtain 5 per cent. milk use upper 24 oz.	all
To obtain 4 per cent. milk use all.	remainder after skimming off 2 oz.
To obtain 3 per cent. milk use remainder after skimming off 2 oz.	remainder after skimming off 3 oz.
To obtain 2 per cent. milk use remainder after skimming off 4 oz.	remainder after skimming off 5 oz.
To obtain 1 per cent. milk use remainder after skimming off 8 oz.	remainder after skimming off 8 oz.

When more than 20 ounces of food is to be made up one should add for 25 ounces one-quarter more of each ingredient; for 30 ounces one-half more; for 40 ounces twice as much, etc. In order to calculate the caloric value of the food quickly it is only necessary to note the number of ounces of the milk used in the formula, multiply this by the caloric value of 1 ounce, and add the caloric value of the sugar or barley used in the formula.

88. Abstracted in THE JOURNAL, July 8, 1911, p. 152.

92. **Surgical Management of Acute Abscesses.**—Southworth says that in the common acute type of glandular suppuration in infancy and early childhood suppuration is not diffuse, but more or less limited by the line of the distended capsule of the gland. The infection having been rounded up and brought under control by the sacrifice of the parenchyma of the gland, Nature seeks as speedily as possible to evacuate the pus and detritus. Therefore, in incising such abscesses do not check a destructive process by heroic measures, but give just the requisite amount of aid to complete a conservative process. When this is accomplished, restitution of the surrounding tissues proceeds with the greatest rapidity.

93. **Treatment of Furunculosis in Children.**—In the past three years McDonald has treated twenty-eight cases in children varying in age from 2 months to 3 years with bacterial vaccines including those with a few scattered furuncles here and there to cases in which they were so large and numerous that it was difficult to find a spot not infected for the passage of the hypodermic needle. The staphylococcus aureus and albus were the causative organisms in all cases. The average initial dose was 25,000,000 staphylococci. Some cases received as high as 150,000,000 without untoward results. The average number of inoculations per patient were three, spaced seven days apart. In three cases there was light redness and swelling at the point of inoculation, which subsided in two or three days. It was not an uncommon occurrence for a fresh crop of furuncles, usually small in size, to appear two or three days after the first inoculation. This, however, did not follow subsequent inoculations.

American Medicine, Burlington

September, VI, No. 9, pp. 447-504

94 Treatment of Chronic Nephritis. G. F. Butler, Wilmette, Ill.
95 Cocainism. G. C. Biondi, New York.
96 Status of Pathology in Medical Science of Modern Times. L. Koempel, Brooklyn.
97 Cryptogenetic Metastatic Uveitis. H. Friedenwald, Baltimore.
98 Modern Treatment of Tuberculosis. O. L. Mulot, Brooklyn.
99 Case of Congenital Syphilis in Infant Treated by Administration of Salvarsan to the Mother: Result Unsuccessful. A. L. Wolbarst, New York.
100 Traumatic Hypnotism. A. MacDonald, Washington, D. C.
101 Vaccine Therapy in Gonorrhea. J. S. Read, Rochester, N. Y.
102 Old Age and Nuclein. W. F. Waugh, Chicago.
103 Vegetable and Fruit Foods. E. Lee, New York.

Medical Record, New York

October 7, 80, No. 15, pp. 709-758

104 *Bacillus Coli Infection of Urinary Tract. R. M. Rawls, New York.
105 *Four Cases of Chronic Dysentery Non-Amebic in Nature. A. Bassler, New York.
106 New Thermo-Therapeutic Method in Gynecologic Cases. S. Flatau, Nuremberg, Germany.
107 Masters of Medicine as Exponents of Medical Ideals. W. B. Konkle, Montoursville, Pa.
108 Treatment of Tetanus. J. N. Henry, Philadelphia.
109 The Strenuous Life. I. L. Nascher, New York.
110 Operation for Hypospadias: Its Present Status. E. C. Beck, New York.
111 Case of Congenital Cavernous Angioma of Neck. A. J. Gilmour, New York.
112 New Hysterectomy Clamp. H. Crutcher, Roswell, N. M.

104. **Bacillus Coli Infection of Urinary Tract.**—During the past two years Rawls has observed quite a number of colon bacillus infections of the urinary tract. He is convinced that in a certain percentage of adults, even in health, the *B. coli* is taken up by the lymphatics and blood-vessels of the intestines and deposited by the blood-current in the kidneys. The number and virulence of these microorganisms depend on the intestinal disturbance and the particular strain present. The greatest predisposing cause of *B. coli* infection of the urinary tract, in his opinion, is anything that interferes with a free secretion of urine or causes any back pressure in the urinary tract. The earliest symptoms of such infection of the urinary tract are apt to be mistaken for those of a mild cystitis, whereas the real site of infection is most often higher up in the urinary tract and of more serious pathologic import. With greater care in diagnosis, Rawls says, we will find that *B. coli* infections of the urinary tract are likely to be mistaken for other acute conditions, such as appendicitis, malaria, intestinal indigestion, toxemia of pregnancy, ether nephritis, and acute and chronic nephritis. This is especially true of postoperative gynecologic cases.

105. **Chronic Dysentery Non-Amebic in Nature.**—Observation of four cases has convinced Bassler that there is a chronic form of dysentery due to the *B. coli communis*, and that these cases are not uncommon in the temperate climates. The form of infecting organisms does not correspond to the Shiga or the mannite-fermenting types, and that they are not possible of differentiation from the known forms of *B. coli communis* of high virulence. The serums from Bassler's cases strongly agglutinated the organisms obtained from that person and more definitely than they did the strains of *B. coli communis* ordinarily obtained and used in laboratory observations. The organisms existed in large numbers in the lower intestinal tract of the patients, mostly in the mucus, and that they are capable of destruction of tissue locally with the production of ulcers and then living within the tissue of the gut wall in the bases of them. In the etiology of these cases Bassler says we are dealing either with a definite organism of the *B. coli* group, or with *B. coli communis* of a high virulence, strongly hemiparasitic in nature and from which the aggressin production is overwhelming and against the effects of which in susceptible individuals the body cannot resist local tissue infection.

Louisville Monthly Journal of Medicine and Surgery

October, 18, No. 5, pp. 129-160

113 Cases Illustrating Some Phases of Cholecystitis. L. Frank, Louisville, Ky.
114 Transverse Myelitis at First Lumbar Level, Ushered in by Intense and Prolonged Testicular Pain, Due to Poliomyelitis. T. A. Williams, Washington, D. C.
115 Dangers of Tonsil Dissection. A. O. Pfingst, Louisville.
116 European Travel Notes. A. Schachner, Louisville.
117 Atypical Diphtheria. Atypical Scarlatina. H. E. Tuley, Louisville.

New York Medical Journal

October 7, XCIV, No. 15, pp. 713-764

118 Nauheim Treatment of Chronic Disease of Heart. J. M. Swan, Watkins, N. Y.
119 *Surgical Consideration of Carcinoma of Stomach. J. F. Erdmann, New York.
120 Roentgen-Ray Diagnosis of Ulcer of Stomach and Duodenum, Embracing Seventy-five Cases. H. Adler and H. E. Ashbury, Baltimore.
121 Fatal Vasomotor Gangrene. R. N. Willson, Philadelphia.
122 Music as Therapeutic Agent. J. Knott, Dublin, Ireland.
123 Case of Partial Tremulous Scrivener's Palsy. T. A. Williams, Washington, D. C.
124 Indications in Psoriasis. F. C. Curtis, Albany, N. Y.
125 *Achroodextrin Saturation Test. H. Weinstein, New York.

119. **Cancer of Stomach.**—Erdmann has done fourteen partial gastrectomies with pylorectomies during the past two years. Of these, one was for a marked induration with ulcer, one in a case accompanied by transverse colectomy, and another in which a removal of the greater portion of the transverse colon was necessitated by injury to the colica media. The others were typical operations of this class. The ages varied from 28 years in a male, with infiltrating carcinoma implanted on a saddle ulcer, to 68 years, in a male in whom the entire transverse colon was removed. In addition to these fourteen he has done a partial gastrectomy with plastic repair in a male for sarcoma of the greater curvature. Of the fourteen gastrectomies the two complicated with colectomy ended fatally, and two of the typical excisions were also fatal, giving a mortality in the typical, noncomplicated cases of three deaths out of thirteen, including the one of injury to the transverse colon as a typical one or 23 per cent. One of the patients in the typical cases did very well until his seventh day, when he refused food, practically starving to death. The other death was due to taking an undue hemoglobin risk, the percentage being well below forty. Death followed in thirty-six hours.

As for the after-care: Erdmann has never hesitated to give these patients water a few hours after the operation. They are placed in the semisitting position as soon as they are in bed. After the first six to twelve hours nourishing liquids, usually albumin water or broths, are given; then milk. On the third day soft foods, and from the fifth to the seventh day creamed potatoes, spinach, and thoroughly masticated meats are allowed. In fact, the patient craves fluids and food, and these are rushed in small quantities frequently given. The patients are allowed to be out of bed about the fourth day, all things being equal, and walk about, from the seventh to the tenth days. Erdmann agrees with Rodman that, when the stomach is exposed and a marked induration is found even if we are satisfied that it is due to ulcer, an excision of the ulcer bearing area is the operation of choice and necessity.

125. **Achroodextrin Saturation Test.**—Summing up his clinical experience Weinstein concludes that achroodextrin and erythrodextrin are both frequently found in hyperchlorhydria, and amylodextrin may be absent. In normal secretion there may be no erythrodextrin, but small quantities of achroodextrin and a preponderance of amidulin may be found. Even in subacidity there may be no erythrodextrin, while achroodextrin and amidulin may both be present. All the dextrins may frequently be demonstrated in the filtrate, irrespective of the secretory condition, excepting anacidity. Achroodextrin and maltose are almost always present in the filtrate. From these results it would appear that some other factors, besides the state of secretion, play an important rôle in influencing the amylolytic process in the stomach. The examinations were confined solely to the aspirated stomach contents after an Ewald test breakfast. Realizing the coarseness of the test usually employed, Weinstein experimented with various dilutions of iodin until he decided on a 1 per cent. alcoholic solution of iodin as the most convenient reagent. He based his test on the property possessed by achroodextrin to absorb iodin without giving rise to a color reaction. As soon as all the achroodextrin in the solution has become saturated, the characteristic color reaction of the preponderating dextrin appears. Weinstein terms it the achroodextrin saturation test. The test is both qualitative and quantitative in character, and although the quantitative phase is not absolute it possesses some value for comparative purposes. The mode of procedure is a follows: To 5 c.c. of the filtrate the reagent is added drop by drop, all the while agitating the mixture, until a decided discoloration takes place. If the color reaction is faint, the number of drops requisite for its production constitutes the saturation index for achroodextrin; if intense, one drop below the number required for its production is to be taken as the index. The result is then computed in 100 c.c. If amylodextrin is present in the solution, the color reaction obtained is a faint blue, which deepens as the reagent is added drop by drop. If no change takes place from the violet blue color, there is no other dextrin in the solution. In the presence of erythrodextrin, however, the end reaction of amylodextrin is a mahogany brown color. In the absence of amidulin the color is reddish or brownish from the very beginning. There is then no need going any further, as this color change precludes the presence of amidulin. The quantity of erythrodextrin is in inverse ratio to the depth of color. It is of no practical advantage to determine the quantity of erythrodextrin, aside from its being extremely difficult to determine its end reaction.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 16, No. 2546, pp. 593-648

1 *External Polypoid Tumors of Stomach. J. Sherren.
2 *Management of Epidemic Summer Diarrhea and Vomiting, Including Use of Saline Injections. H. K. Waller and G. Walker.
3 *Case of Pleural Tuberculosis with Large Effusion. E. C. Carter.
4 *Detection of Tubercle Bacilli in Sputum. F. W. Eurich.
5 Nutritive Value of Flours. M. Flack and L. Hill.
6 Case of Septic Pneumonia Caused by Hatpin. L. C. V. Hardwicke.
7 *Some Circulation Factors Admitting of Easy Measurement. A. Haig.
8 *Presence of Valves in Veins of Portal System. D. P. D. Wilkie.
9 *Action of Ileo-Psoas Muscles. A. MacLennan.
10 Achondroplastic Skeleton. L. Graham.
11 Effect of Iso-Osmotic Solutions of Various Salts on Isometric Curve of Frog's Muscle. E. W. Carlier.
12 Physiology of Some Allyl Compounds. E. W. Carlier.
13 Some Physiologic Observations on Men Wearing Mine-Rescue Apparatus. D. F. Harris.
14 Tetrachromic Vision. F. W. Edridge-Green.
15 *Nutritive Effects of Beef Extract. W. B. Thompson, W. Caldwell and T. A. Wallace
16 Some Notes on Variation. R. J. Anderson.

September 23, No. 2647, pp. 649-716

17 Treatment of Severe Talipes. R. P. Rowlands.
18 Case of Wry-Neck Following Infantile Paralysis. F. Hernaman-Johnson.
19 Four Hundred Cases of General Anesthesia Preceded by Scopolamin. F. Rood.
20 Brighton United Twins (Pygopagi). J. A. Rooth.
21 Treatment of Syphilis by Salvarsan. C. H. Browning and I. McKenzie.
22 Salvarsan in Leprosy. F. A. de Verteuil and F. L. de Verteuil.
23 *Merits of a Relatively Low Protein Diet. R. H. Chittenden.
24 Scope of Normal and Immune Serum in Treatment. T. J. Horder.
25 Continuous Antiseptic Inhalation in Treatment of Pulmonary Tuberculosis. C. Muthu.
26 Recent Developments in Recognition and Treatment of Syphilis. J. E. Lane, L. W. Harrison and J. E. R. McDonagh.
27 Use of Salvarsan in Syphilis. T. W. Gibbard and L. W. Harrison.

1. **External Polypoid Tumors of Stomach.**—Sherren describes pedunculated growths springing from the stomach, usually originating from its posterior surface near the greater curvature. They grow into and often become intimately adherent to the lesser peritoneal sac. In a few instances they have sprung from the lesser curvature and grown between the layers of the gastrohepatic omentum. These tumors are met with more often between the ages of 35 and 55, and are more common in women. Sherren has been able to collect eighteen cases in which the sex was mentioned; thirteen were women. The characteristic feature of a case of this nature is the discovery of a tumor in the upper or mid-abdomen in a patient whose chief or only complaint is abdominal discomfort. Occasionally the presence of an abdominal swelling is the only thing noticed. The tumors are smooth and rounded, often cystic and movable from side to side. In a woman the diagnosis of an ovarian tumor is almost inevitable if the tumor is large and fills the mid and lower abdomen. Operations were undertaken with this diagnosis in several cases.

Tumors of this type have certain features in common; they are mesoblastic in origin, and usually form polypoid masses hanging from the greater curvature of the stomach into the lesser sac, to which they become adherent. Their exact nature is only discovered on microscopic examination. They are usually malignant, and may start in the submucous, muscular or serous coats, but do not involve the mucous membrane. When originating in the first and last situations they are always malignant, but tumors described as myomata may grow from the muscular coat and present no sign of malignancy. In other cases with similar microscopic characters secondary deposits have been found—leiomyoma malignum. Thus in fourteen recorded cases of operation for gastric myoma four were of this nature. Diagnosis of their exact nature is impossible before operation. Treatment should be by removal with wide resection of the gastric wall from which the tumor springs.

2. **Epidemic Summer Diarrhea and Vomiting.**—Briefly, the method employed in the East London Hospital for Children, as described by Waller and Walker, is as follows: On admission the stomach is washed out with saline (0.9 per cent. solution) at a temperature of 110 F. The gastric contents are often exceedingly foul smelling and copious. With very few exceptions the vomiting ceases absolutely and does not recur. The rectum is next washed out with saline at a similar temperature, the irrigation continuing until the return flow is clear. If done in this order time is saved, as the bowels usually move freely during the gastric lavage, and the subsequent rectal irrigation is a shorter proceeding. If any great degree of collapse or shock is present a mustard bath, or in extreme cases, a mustard pack, is given, and is one of the most useful remedies that can be employed. The child will, as a rule, then sleep quietly for an hour or so, during which time a subcutaneous infusion of normal saline, or of a 5 per cent. solution of glucose in normal saline, is started.

3. **Pleural Tuberculosis with Large Effusion.**—In the case cited by Carter, that of a man 30 years old, 9 pints and 8 ounces (188 ounces) of clear yellow fluid were withdrawn from the right side through a small cannula in twenty minutes. At the end of the time the fluid was still running, but as the patient began to cough and his pulse showed irregularity, it was considered advisable to withdraw the instrument. Tapping was soon needed again, and 90 ounces and 100 ounces were removed on separate occasions from the right side, while the left side yielded 60 ounces once. The fluid removed presented the characters of an exudate rather than a transudate. Fraenkel's pneumococcus was recovered from it, but no tubercle bacilli The latter were also absent from the scanty sputum. Later 125 ounces were removed from the right chest with some temporary improvement. Tapping the pleura toward the end yielded very small amounts of fluid (2 ounces).

4. **Tubercle Bacilli in Sputum.**—The method used by Eurich is the one originally described by Koslow in 1910. A quantity of the sputum is shaken up with a strongly alkaline sodium hypochlorite solution (15 per cent. liquor sodæ hydrasel, such as a measure cylinder, the proportions depending on tus plus liquor sodæ chlorinatus ää) in a glass-stoppered vessel, such as a measure cylinder, the proportions depending on the consistence of the sputum; if the latter is very viscid or dense an equal proportion may be required; if thin, then half the amount may suffice. The mixture is occasionally shaken during five minutes; it is then diluted with a volume of distilled water approximately ten times as great as that of the sodium hypochlorite solution used, and again shaken for a few minutes. Finally there is added a mixture of equal parts of ether (methylated ether will do) and acetone equal in volume to that of the water. It is shaken once more for a few seconds and the whole allowed to stand. In a few minutes the contents of the bottle will be found to separate into three layers. The middle layer, appearing as a more or less dense white ring, will contain nearly all the tubercle bacilli that may be present in the sputum, and can be drawn off with ease by means of a pipette fitted with a teat. The density of this middle layer can be increased after it has been pipetted off, if desired, with the help of a centrifuge (an ordinary hand centrifuge will answer the purpose), but it is not necessary. A film is made, dried and fixed in the usual way by passing it through a flame. Before staining the film Eurich immerses it for a few seconds in 5 per cent. sulphuric acid to neutralize any adhering alkali, and it is washed to remove the acid. If the examiner is interrupted, or otherwise pressed for time, the whole mixture may be allowed to stand till the next day or even longer; the acid-fast property of the bacilli is not affected by the delay. The mixture should be diluted with distilled, not with tap water, as the latter may contain acid-fast bacilli.

7. **Circulation Factors Admitting of Easy Measurement.**—The factors in circulation admitting of easy measurement and which are discussed by Haig are the capillary reflux, the blood-pressure, the ratio of capillary reflux to blood-pressure, the cardiac diameter and the liver dulness.

8. **Valves in Veins of Portal System.**—To sum up, Wilkie emphasizes that we have now definite proof that there are valves in the veins of the portal system; that these valves are widely distributed throughout the tributaries of the portal vein, and that while well developed in the infant and young child they tend to become incompetent in the adult. These valves, which are well developed in most of the lower mammals, appear in man to be undergoing a retrograde metamorphosis.

9. **Action of Ilio-Psoas Muscle.**—Evidence is given by MacLennan to prove that the ilio-psoas muscle is not an adductor, but an abductor, not an inward but an outward rotator of the femur.

15. **Nutritive Effects of Beef Extract.**—The authors' experiments tended to prove that the addition to the diet of the beef extracts used (commercial and self-made) led to an increase of body weight both in the case of animals and of man. Accompanying this increase there was a retention of a considerable proportion of the nitrogen given in the extracts. The extracts also caused a reduction in the output of nitrogen by the feces, this no doubt being due to a better digestion and absorption of food of the ordinary diet. The extracts may therefore be accredited with both a direct and an indirect nutritive value. During the feeding with the extracts there was also a retention of water in the body.

23. **Merits of Low Protein Diet.**—Reliance on protein as a source of energy is held by Chittenden to be theoretically and practically undesirable. It is true that the protein molecule contains, in addition to its 16 per cent. of nitrogen, 52 per cent. of carbon. After the molecule is denitrogenated, the residue, the non-nitrogenous moiety of Foster, can serve the same purpose in the body as fat and carbohydrate, but to obtain energy from this source means letting loose in the system a mass of nitrogenous waste products which the body cannot use and which must be eliminated at some expense, even if no other undesirable results follow. Why not, asks Chittenden, rely on fat and carbohydrate for the energy needed by the body, and use protein food solely for the purposes which it, and it alone, is especially fitted to fulfil? Such a course has the merit of being more closely in accord with physiologic laws, while at the same time there is a suggestion of conservation of health and strength, combined with a certain amount of physiologic economy, that may ultimately result in increased efficiency.

Australian Medical Journal, Melbourne

August 5, I, No. 3, pp. 25-36

28 Surgery of Chronic Gastric Ulcer. B. T. Zwar.
29 Hypertrophic Stenosis of Pylorus, with Spasm. T. E. Green.
30 Proteolytic Power of Proprietary Preparations. S. W. Patterson.
31 *Hydatid as Cause of Appendicitis. A. S. Trinca.

August 12, I, No. 4, pp. 37-48

32 Splenic Anemia and Splenectomy. R. A. Stirling and J. Grantley-Shelton.
33 Deviations of Nasal Septum. D. McM. Officer.
34 Variation in Stethoscopic Cardiac Physical Signs. W. H. Summons.
35 Pneumococcic Meningitis. A. V. M. Anderson.

August 19, I, No. 5, pp. 47-56

36 Lacerations at Vaginal Outlet. G. Horne.
37 Hypernephroma. A. S. Trinca.
38 Clinical and Bacteriological Investigation of Infantile Diarrhea. R. L. Forsyth.
39 Case of Actinomycosis. C. E. Dennis.

August 26, I, No. 6, pp. 57-66

40 Acquired Talipes Valgus. W. K. Hughes.
41 Adrenalin. J. L. Jona.
42 *Case of Hydatid of Colon. A. Honman.
43 Intrauterine Crying of Child. R. H. Fetherston.

31. **Appendicitis Due to Hydatid.**—In this case the appendix was found lying behind the cecum with an adherent mass near its tip. The mass proved to be a hydatid cyst. Spread over the cyst and along the anterior surface of the appendix were tortuous dilated veins. The cyst had developed between the layers of the meso-appendix, from which the adventitious coat had arisen. Traction of the cyst at the appendix had produced a kink at the point of attachment, and this kink had apparently caused the symptoms, for a microscopic section of this part of the appendical wall showed constriction of the lumen and engorged, dilated vessels, but no other signs of inflammation. Examination of some of the clear cyst fluid revealed typical hydatid scolices. Projecting through the serous coat of the appendix nearer the proximal end were two small white rounded bodies, probably hydatid cysts in an early stage of development.

42. **Hydatid of Colon.**—Honman's patient had had during eight months four attacks of severe abdominal pains, accompanied with vomiting. In December he had a severe attack and had vomited a quantity of blood and large quantities of bile, and had passed a quantity of blood by the bowels; this was followed by obstruction of the bowels, which was finally relieved by high enemas, etc. His condition was diagnosed as ulcer of the stomach and he was sent into a private hospital and treated by artificial feeding, etc., and he left there the following January considerably improved. On returning to work, which entailed a lot of riding, his pains returned, and on consulting Honman he stated that while he was in no pain he suffered from indigestion, had had blood in his motions to a more or less degree for the previous three weeks, and had tarry motions and complained of pain in the right groin and on urinating. There was marked rigidity of the muscles over the right side of the abdomen, and a mass could be felt rather higher than the normal appendicular region, and there was some tenderness on deep pressure there. The urine was free from albumin, pus or blood. Honman operated and found a hard mass covered with adhesions, which, on separating, showed a growth attached to the ascending colon, and as it presented every appearance of being a sarcoma, and was protruding into the lumen of the intestine, Honman resected the colon, joining by end-to-end anastomosis. The mass had a very thick wall and was closely packed with hydatid cysts; the larger pole of the growth had only mucous membrane covering it, and it had evidently started in the muscular walls.

Malaya Medical Journal, Singapore

July, IX, Part 3, pp. 5-97

44 Production and Treatment of Milk in Europe. S. A. R. Glennie.
45 System of Medical Education. R. D. Keith.
46 Working of Births and Deaths Registration Ordinance. W. R. C. Middleton.
47 Night-Soil Conservancy in Cantonments. P. Hehir.
48 Foreign Bodies in Knee-Joint. K. C. Sinha.

Journal of Tropical Medicine and Hygiene, London

September 1, XIV, No. 17, pp. 253-268

49 Etiology and Prophylaxis of Malta Fever in South Africa. A. Garrow.
50 *Transmission of Leprosy. E. C. Long.

50. Abstracted in THE JOURNAL, Sept. 30, 1911, p. 1164.

Annales de l'Institut Pasteur, Paris

July, XXV, No. 7, pp. 497-560

51 Classification of Trypanosomes. (Identification et essai de classification des trypanosomes des mammifères.) A. Laveran.
52 Pulmonary Tuberculosis in Cattle Not of Digestive Origin. (La tuberculose thoracique du bœuf n'est pas d'origine digestive.) P. Chansse.
53 Salvarsan in Relapsing Fever. (Essais de traitement de la fièvre recurrente d'Afrique par l'arsenobenzol "606." Réaction méningée de la tickfever chez l'homme.) J. Rodhain, C. Pons and F. van den Branden.
54 Research on Japanese Snake Poison. (Expériences sur le venin du Trimeresurus riukiuanus. M. Nicolle and A. Berthelot.

August, No. 8, pp. 561-624

55 Action of Horse and Beef Serum on Isolated Guinea-Pig Heart. (Etude de l'action du sérum de bœuf et du sérum de cheval sur le cœur isolé du cobaye.) L. Launoy.
56 Anaphylaxis Induced by Ingestion of Crepitin. (De l'anaphylaxie alimentaire par la crépitine.) C. Richet.
57 Monkey Plasmodium. (Plasmodium des macaques de Tonkin.) C. Mathis and M. Leger.
58 Peculiarities of Growth of Bacterium zopfii Kurth. (Note sur les tropismes du Bacterium zopfi "Kurth.") H. Kufferath.
59 Agglutination of Non-Motile Microbes by Normal Serums. (Agglutination des microbes immobiles par les sérums normaux.) L. Nègre and M. Raynaud.

Annales des Maladies des Org. Génito-Urinaires, Paris

August 15, XXIX, No. 16, pp. 1441-1536

60 Tuberculosis of the Kidneys of Blood-Borne Origin. (Quelques considérations sur la pathogénie de la tuberculose rénale d'après deux autopsies.) P. Heresco and M. Cealic.
61 *Perineal Prostatomy for Gonorrheal Abscess Cures the Gonorrhea. (Sur les résultats éloignés de la prostatomie périnéale dans les abcès blenorrhagiques de la prostate, avec des considérations particulières sur la guérison de la blenorrhagie.) M. Cealic and L. Strominger.

61. **Perineal Prostatomy for Gonorrheal Abscess Cures the Gonorrhea.**—Cealic and Strominger report twenty-two case histories, all showing that perineal evacuation of a gonorrheal abscess in the prostate is a simple and excellent measure, as it not only cures the local lesion in the prostate but it facilitates the cure of the gonorrhea as a whole, even in cases in which it had long resisted the ordinary measures. They advise prostatomy without delay as soon as the diagnosis is made. In one case typical of many in their experience the abscess perforated into the rectum and the patient felt relieved and treatment was restricted to massage and lavage of the urethra. The prostate persisted large and tender and traces of the urethritis were evident for a year, when the prostate swelled again with perceptible fluctuation and fever. Prostatomy was done at once and the gonorrhea was eradicated.

Presse Médicale, Paris

September 13, XIX, No. 73, pp. 729-736

62 Choleriform Syndromes. E. Joltrain and M. Mailliet.
63 *Diagnosis of Ulcer in Duodenum-Pylorus Region. (Diagnostic de l'ulcère de la région duodéno-pylorique.) L. Meunier.
64 Synthetic Purgatives. (Les purgatifs synthétiques.) A. Martinet.
65 Specific Precipitin Reaction in Meningococcus Cerebrospinal Meningitis. Collignon and Pilod.

63. **Diagnosis of Duodenal Ulcer.**—Meunier has found it possible to diagnose a duodenal ulcer by rinsing out the stomach with a 1 per cent. solution of glacial acetic acid. Under the

influence of this acid fluid the pylorus shuts up and thus prevents the fluid from passing along into the duodenum. At the same time, if the ulceration is in the stomach, the acid solution dissolves the crystals of hematin found on the surface of a relatively recent raw surface. The positive reaction indicating the presence of blood in the rinsing fluid thus indicates ulceration in the stomach. The absence of traces of blood in the rinsing water, in connection with the symptoms suggesting duodenal ulcer, such as paroxysmal tardy pain in the stomach region—all this points to a duodenal ulcer. In every case in his experience in which the acetic acid reaction in the stomach rinsing water was positive, the following operation confirmed the presence of an ulcer in the body of the stomach. In two patients the reaction was negative. One was operated on by Moynihan at Leeds and the other by Pauchet at Amiens, and in each case the diagnosis of an exclusively duodenal ulcer was confirmed. The acetic acid test of the rinsing water of the stomach should be supplemented by examination of the stools for traces of blood. If blood is found in the stools and none in the rinsing water of the stomach, this locates the lesion below the stomach and it is almost invariably to be found just below the pylorus.

Semaine Médicale, Paris

September 13, XXXI, No. 37, pp. 433-444

66 *Dangers of Alkaline Intravenous Injections; Toxic Effects of Sodium. (Les dangers des injections intraveineuses alcalines; effets toxiques du sodium.) L. Blum.

66. **Dangers of Intravenous Alkaline Injections.**—Blum is convinced that many symptoms and disturbances observed after injection even of saline solution are due to the sodium chlorid in itself, recent research on "salt fever" in infants having revealed unsuspected pathogenic properties in it. It is certainly safer to use a physiologically balanced solution, adding a little alkali to the salt solution, as the physiologists have long been doing in their research. With alkaline solutions the problem is even more difficult, Blum's clinical experience with them having demonstrated the possible mishaps liable from their use. In two patients drifting into diabetic coma, the injection of a 2.5 or 5 per cent. solution of sodium carbonate was followed in about four hours by convulsions and death. The injection was difficult on account of spasmodic contraction of the vessels preventing the infusion. When it finally succeeded, the walls of the vessels were evidently injured by the alkaline solution as the blood infiltrated into the surrounding tissues the entire length of the vein. The symptoms of intoxication in both these cases, as also in two other patients who had been given a preceding injection of sodium glutarate, testified to the toxic action of the sodium. Many clinicians, including Frerichs and Naunyn, have never witnessed convulsions in the course of diabetic coma, and Blum has been able to find records of only six cases of the kind in the literature. His experience with only these four cases, in his twenty-five of diabetic coma, in which fatal convulsions developed after the alkaline injection, when he never witnessed anything of the kind before and none since he has abandoned the use of these alkaline solutions, points to the injections as the causal factor. Two of the patients thus succumbing were girls of 15 and 16, the others women of 23 and 71, all with diabetic somnolency but not amounting to coma in every case. Blum refers parenthetically to Labbé's recent report of an old diabetic, a woman of 65, of a diabetic family, who seemed to be lapsing into diabetic coma. He made an intravenous injection of 500 gm. of a 3 per cent. solution of sodium bicarbonate daily for five days, while the patient took about 70 gm. of sodium bicarbonate by the mouth; she gradually recovered and is now in good condition. Labbé added that he knows of only seven other cases on record in which diabetic coma failed to terminate fatally. He has also reported equally favorable results in a second, less severe case, after two intravenous injections of 15 gm. of sodium bicarbonate in a 3 per cent. solution, the patient a woman of 52, diabetic for twelve years. Blum further refers to the fact that Stadelmann has emphasized the importance of using the sesquicarbonate of sodium instead of the carbonate or bicarbonate as better tolerated than the carbonate while containing more sodium than the bicarbonate. It is produced merely by heating the solution of sodium bicarbonate, thus permitting some of the carbonic acid to escape.

Beiträge zur Klinik der Tuberkulose, Würzburg

XX, No. 3, pp. 345-533. Last indexed September 30, p. 1168

67 *Immunization Against Tuberculosis with Partial Antigens. (Das Problem der Tuberkuloseimmunisierung und die Ableitung einer neuen Immuntherapie der Tuberkulose.) H. Much.

68 *Importance of the Different Elements of the Tubercle Bacilli for Tuberculosis and Leprosy. (Die Tuberkelbazillen im Systeme der säurefesten Bakterien und die Bedeutung der einzelnen Bazillenbestandteile für Tuberkulose und Lepra.) H. Much and E. Leschke.

69 *The Separation of Tubercle Bacilli Into Their Elements. (Die Auflösung von Tuberkelbazillen nach Deycke und Much.) E. Leschke.

70 *Action of Dissolved Tubercle Bacilli. (Das biologische und immunisatorische Verhalten der Tuberkelbazillenauflösungen nebst Tuberkulinstudien und Tuberkuloseimmunitätsstudien.) H. Much and E. Leschke.

67 to 70. **Importance of Various Elements of Tubercle Bacilli for the Clinical Reaction.**—Much and Leschke believe that they have established that the fat, the albumin and the aromatic substance in the tubercle bacilli each play a part in the reaction to tuberculin, and that it is possible to isolate these various elements and induce a reaction to each separately. Each of these elements is able to induce a hypersusceptibility and induce the production of antibodies for each of these elements separately. The reaction in different persons thus may be of an entirely different nature, either an albumin-antialbumin reaction, a fat-antifat reaction or a toxin-antitoxin reaction, or all of these reactions may occur at once. By the complement-binding tests it may be possible to determine which of the above antibodies is lacking in the individual case, and by vaccinating with the antigen in question induce durable immunity or a complete cure. The organic acids seem to be most effectual in separating the tubercle bacilli into these elements, which is a different matter, they explain, from simple dissolving of the bacilli. They prefer for it the term *Aufschliessung*, which means an unlocking, and state that this conception of partial antibody production and partial antigens opens a new horizon for vaccine therapy with partial antigens.

Beiträge zur klinischen Chirurgie, Tübingen

LXXIII, No. 3, pp. 569-814

71 General Anesthesia by Injection of Preparation of Opium and Scopolamin. (Injektionsnarkose mit Pantopon-Skopolamin.) M. von Brunn.

72 Roentograms of Some Rare Traumas of the Wrist. (Ueber seltene Handwurzelverletzungen im Röntgenbilde.) A. Nast-Kolb.

73 Deforming Ostitis. (Zur Kenntnis der Ostitis fibrosa.) K. Hartmann.

74 Contusion of the Duodenum. (Zur Kenntnis der Verletzungen des Duodenums durch stumpfe Gewalt.) E. Lonhard.

75 Experiences with Fractures. (Knochenbrüche und deren Behandlung während der Jahre 1908-10 im Katharinenhospital zur Stuttgart.) E. Lonhard.

76 *Fractures and Roentographic Findings. (Zur Diagnostik und Statistik der Frakturen vor und nach der Verwertung der Röntgendiagnostik.) H. Plagemann.

77 Torsion Tension in the Upper Arm. (Die Torsionsspannung im Oberarm.) H. Zuppinger.

78 Arteriovenous Femoral Aneurysm; One Case. (Zur Kenntnis des arteriovenösen Aneurysmas der Arteria und Vena profunda femoris.) B. Rubesch.

79 The Non-Striated Musculature of the Orbit and Its Importance for the Eye Symptoms in Exophthalmic Goiter. (Die glatte Muskulatur der Orbita und ihre Bedeutung für die Augensymptome bei Morbus Basedowii.) H. Freund.

80 Bone Formation in Laparotomy Scar. (Ueber Knochenbildung in Laparotomienarben.) W. Capelle.

81* Operative Treatment of Metastatic Carcinoma of the Spine. (Chirurgische Eingriffe bei metastatischen Karzinom der Wirbelsäule.) A. Tietze.

76. **Fractures and Roentoscopy.**—Plagemann tabulates the details of 3,664 fractures treated at the Rostock surgical clinic, 1891-1910, and compares the ultimate outcome with the roentographic findings in a large number. He remarks in conclusion that the Roentgen rays have simplified the diagnosis of fractures and have been of great aid as a guide to treatment, but still they are of little use and even misleading with certain fractures, such as fracture of the base of the brain. In a number of other fractures, also, the injury of neighboring organs has more to do with the ultimate outcome than the fracture of the bone itself. The chief advantage of the Roentgen rays is that they permit constant oversight of the objective condition later.

81. **Operative Treatment of Metastatic Cancer of the Spine.**—Although a radical cure is not possible, yet immense relief can be obtained by a palliative operation in these cases, and Tietze has applied it in five of his six cases of the kind. The patients were women from 32 to 54 years old and the primary cancer had been in the breast which had been amputated from a few months to three years before. The findings are illustrated in the operative cases. The benefit from the operation was great at first but did not last longer than a few weeks, except in one case. This patient was delivered from her agonizing pains and lived for more than a year in a satisfactory condition, dying then of pneumonia. In considering a palliative operation of the kind, the comparative malignancy of the primary cancer is an important factor to be borne in mind in estimating the possible benefit from the operation.

Beiträge zur klinischen Chirurgie, Tubingen

LXXIV, pp. 1-754. L. Rehn Festschrift

82 *Resection of Left Lobe of Liver for Cancer. (Totalresektion des linken Leberlappens bei primärem Leberkrebs.) H. Klose.
83 Cancer of the Kidney in Young Children; Two Cases. (Ueber das Nephroma embryonale malignum.) H. Klose.
84 Plasmocytoma of the Pleura. H. Klose.
85 Ganglionellular Neuroma. (Ueber das Neuroma ganglionellulare benignum et malignum.) G. Brossok.
86 Tuberculosis of the Parotid Gland. (Parotistuberkulose.) O. Homuth.
87 Nature and Early Stages of Deforming Ostitis. (Zur Kenntnis des Frühstadiums der sogenannten Ostitis fibrosa.) C. Haeberlin.
88 *Achievements and Problems of Operative Neurology. (Die heutigen Leistungen und die nächsten Aufgaben der operativen Neurologie.) S. Auerbach.
89 End-Results of Operative Treatment of Appendicitic Peritonitis. (Die gegenwärtigen Erfolge bei der chirurgischen Behandlung der freien eitrigen Wurmfortsatzperitonitis.) K. Propping.
90 Serum-Proof Typhoid Bacilli in an Ovarian Cyst. ("Serumfeste" Typhusbacillen im Eiter einer Ovarialcyste.) K. Laubenheimer.
91 Tuberculosis Toxin and Anaphylaxis. (Tuberkulosegift und Anaphylaxie.) G. Landmann.
92 *The Value of the Differential Leukocyte Count in Surgical Diagnosis and Prognosis. (Wert der Sondern'schen Resistenzlinie für die Diagnose und Prognose in der Chirurgie.) E. Lampé, Jr.
93 Resection of Upper Jaw for Cancer. (Ueber totale und ausgedehnte Oberkieferresektionen wegen maligner Tumoren.) H. Bade.
94 Treatment of Trauma of Pleura and Lung. (Zur Behandlung der Pleura und Lungenverletzungen.) J. Amberger.
95 Hernia and Eventration of the Diaphragm. (Ueber Zwerchfellinsuffizienz.) O. Franck.
96 *Extradural Spinal Cord Tumors. (Zur Klinik der extraduralen Rückenmarksgeschwülste.) E. Siegel.
97 Perforation of Gastric Ulcer in Soldier During Army Manœuvers. (Durchbruch eines Magengeschwürs im Manöver.) L. Druner.
98 *Tumors in Large Intestine. (Dickdarmgeschwülste.) E. Schmidt.
99 Incarceration of Hernia in Artificial Anus. (Incarceration einer Dünndarmschlinge in der prolabierten Darmwand eines Coecalafters.) F. Bode.
100 Prolapse of Invaginated Intestine Through Postoperative Fistula. (Prolaps des invaginierten Colon ascendens und Coecum durch eine nach Blinddarmoperation zurückgebliebene Kotfistel.) F. Becker.
101 Opening the Common Bile Duct Through the Duodenum. (Transduodenale Choledochotomie.) B. Bosse and S. Brotzen.
102 Splenectomy for Traumatic Rupture of the Spleen and Blood Changes Thereafter. (Zur Splenektomie bei der traumatischen Milzruptur und zur Frage der dadurch bedingten Blutveränderungen.) F. Schulze.
103 Cysts and Pseudocysts in the Pancreas. (Pankreascysten und -pseudocysten.) E. Wolff.
104 Elimination of Bacteria in Normal Secretions of Glands. (Zur Frage der Bakterienausscheidung in den normalen Drüsensekreten.) W. Noetzel.
105 Circular Suture and Transplantation of Vessels. (Ueber die cirkuläre Gefässnaht und über die Transplantation der Gefässe.) J. M. Glasstein.
106 Deformity of the Wrist in Relation to Rachitis. (Die Madelung'sche Deformität in ihrer Beziehung zur Rachitis.) O. Homuth.
107 Removal of the Shoulder from the Rear. (Die Freilegung des Schultergelenks und der Achselhöhle von der Rückenseite her und die totale Exstirpation des Schultergürtels und Armes.) L. Drüner.
108 *Surgical Treatment of Sagging Gastro-Intestinal Tract; Movable Cecum. (Das mobile Coecum mit seinen Folgezuständen und die chirurgische Behandlung ptotischer Erkrankungen des Magendarmkanales.) H. Klose.
109 *Cancer Following Trauma. (Zur Frage der "posttraumatischen Krebse.") S. Löwenstein.
110 Rosenbach Tuberculin in Treatment of Local Tuberculosis. (Zur Behandlung der örtlichen Tuberkulose mit Tuberkulin Rosenbach.) L. Seyberth.
111 Prophylaxis and Treatment of Inguinal Hernia. (Eine einfache Methode zur Beseitigung der weichen Leiste.) L. Seyberth

82. **Resection of Liver for Cancer.**—Klose reports what he thinks is the first successful resection of the entire left lobe of the liver for cancer. His patient was a man of 45. He died a few days afterward from fulminating endocarditis affecting a heart already in chronic fatty degeneration. Necropsy showed that the operation on the liver had been a complete success and that there was no trace of metastasis. The first symptoms of the cancer had been noticed six months before in the form of occasional stomach cramps and oppression, but no vomiting or jaundice. The stomach region began to protrude after four or five months, the man lost 42 pounds in weight. He was a manufacturer, well nourished, and the solid tumor palpated in the epigastrium could be pushed about within a range of 15 cm.; it was apparently independent of the stomach.

88. **Operative Neurology.**—Auerbach reviews the history, achievements and outlook for operative treatment of exophthalmic goiter, hysteria, epilepsy and brain, spinal cord and peripheral nerve affections. Rehn, in whose honor the bulky volume is issued, was the first in Germany to attempt operative treatment in exophthalmic goiter. The experiences to date indicate that the slightest tendency to myxedema formally contra-indicates an operation on the thyroid, and myodegeneration of the heart is also a dangerous element, although a complete cure or great improvement has been realized by some surgeons even in these very severe cases. Auerbach has himself had an experience of this kind. If the patients are wage-earners, he advises not delaying more than two or three months for a trial of vigorous internal measures before applying operative treatment, but, when possible, he prefers a six-months' course of medical treatment before resorting to strumectomy. He protests against the general hospital for such patients on account of the inevitable nervous shocks encountered there; such patients do better under oversight in the home or, better still, in convalescent homes, which are the crying need of the modern hospital system, especially for care of the severer nervous affections.

92. **The Blood Count for Diagnosis and Prognosis in Surgery.** Lampé has been applying F. E. Sondern's method for the differential leukocyte count and has become convinced of its value for both diagnosis and prognosis. The twenty cases he reports confirm Sondern's statements in every particular, with one possible but not certain exception. He also reports experimental research which gave still further confirmation of Sondern's views and of the value of his "resistance curve." "It permits," Lampé says, "an amazing insight into what is going on in the organism, reflecting as in a mirror the fight the body is putting up against the invading infection. Every repulse and every victory can be overlooked, and in the puzzling cases the method is of extreme importance; of course, it is not needed in the cases in which conditions are plain before the eyes without this aid."

86. **Extradural Spinal Cord Tumors.**—Siegel recently operated in two cases of this kind with complete success, although the tumor was secondary to cancer elsewhere, which has already proved fatal in one case, about a year after the operation. The patient was a man of 30 and the tumor removed was of the adenomacarcinoma type. The other patient was a woman of 33 with a small goiter for the last six years which had never caused any disturbances. The tumor removed from the spinal cord proved to be a metastasis of the struma. Siegel reviews the cases on record of metastasis from an apparently benign struma. The metastasis was generally in a bone and nothing malignant could be found in the thyroid after death in the cases in which necropsy was possible, except in Huguenin's case; in the others the findings were merely those of a colloidal goiter or normal thyroid. Riedel has had a case in which a metastasis of this kind recurred in the jaw ten years after removal of the first metastasic tumor, and yet the thyroid has been apparently normal all the time.

98. **Experiences with Tumors in the Large Intestine.**—Schmidt concludes from his sixty-three operative cases that resection and suture at one sitting give the best end-results, especially or care of the severer nervous affections.

108. **Movable Cecum.**—Klose reviews the history of operative treatment of conditions resulting from sagging of any portion of the gastro-intestinal canal, and discusses the subject from the standpoint of embryology, anatomy, physiology and symptomatology, especially the clinical picture of movable cecum. He states that 134 patients in this latter category have been given operative treatment at Rehn's clinic, including twelve children, and 75 per cent. were under 25 years old. In 70 per cent. the trouble was evidently of congenital origin. The main symptom was intermittent afebrile or subfebrile colic pains, like neuralgia, generally localized in the right side. There was also a localized elastic resistance in the ileocecal region, an air-cushion sensation on palpation, with ileocecal gurgling or splashing, increased peristalsis during the attacks, constipation followed with diarrhea, admixture of blood and mucus with the stools and carbohydrate fermentation. Klose remarks that the question of "pseudo-appendicitis" and "intestinal hysteria" needs to be studied anew by the internists as this assumption of a movable cecum has knocked out most of the foundation for them. Roentoscopy showing retarded peristalsis in the cecum shadow is typical for the movable cecum. Patients with this anomaly are liable to wander from one doctor to another, finding no relief, their disturbances being unjustly classed as neurasthenic, while operative fixation of the movable bowel clears up the diagnosis and generally cures the patient at one stroke. He gives the details of a few typical or unusual cases and of cases showing how the anomaly spreads to involve other parts of the bowel the longer it is left untreated. He concludes with an illustrated description of the preferred operative technic; the curving incision is unusually long and the cecum is sutured throughout its entire length to fasten it in place, taking up in the suture only the serosa of the bowel and fastening the bowel as far back as possible. When the ptosis is universal, he prefers a long incision in the median line, curving around the umbilicus; in one case illustrated the sagging large intestine, spleen and liver all required fixation.

109. **Posttraumatic Cancer.**—Löwenstein published last year a compilation of 271 cases of cancer developing apparently in connection with a trauma and adds nine more cases to the list here. This research indicates that we must now reckon with the effects of a single trauma as liable to induce the production of cancer just as certainly as we accept chronic irritation as a factor. He discusses the connection between the accident and the cancer from the standpoint of industrial insurance, and states further that his experience with disinfectants in treatment of inoperable cancer and in prophylaxis after operations—especially with large doses of quinin, santonin and thymol, given by the mouth or injected into the muscles or parenchyma or directly into the tumor—all the phenomena and results obtained have converted him to the view that a parasitic origin of cancer is not so impossible or improbable after all.

Berliner klinische Wochenschrift

September 18, XLVIII, No. 38, pp. 1705-1740

112 Local Anesthesia in Gynecology and Obstetrics. (Anwendungsbreite der Lokalanästhesie in der Gynäkologie und Geburtshilfe.) P. Kroemer.
113 Fracture of Spinous Processes. (Ueber Dornfortsatzfrakturen.) O. Ehringhaus.
114 Tumor of Spermatic Cord; Two Cases. (Samenstrangtumoren.) H. Schlueter.
115 Paralysis Agitans, Especially the Behavior of the Larynx. (Verhalten des Kehlkopfes bei der Paralysis agitans nebst einigen allgemeineren Bemerkungen über die Krankheit.) W. Graeffner.
116 *Diagnosis of Arteriosclerosis of the Legs. (Zur Diagnose der arteriosklerotischen Erkrankungen der unteren Extremität.) J. Rosenbusch.
117 Cultivatibility of Ameba on Hay. (Kultivierbarkeit der Amöben auf Heu.) G. Franchini and Raspaolo.
118 *The Meiostagmin Reaction in Cancer. (Die Meiostagminreaktion bei malignen Geschwülsten.) F. Leidi.
119 Relative Immunity of Lepers to Cancer. (Die relative Krebsimmunität der Leprakranken.) M. Soegaard.
120 Sensitizing of Spirochetes in Infants Nursing Mothers Under Influence of Salvarsan. (Ist das Auftreten von spezifisch luetischen Erscheinungen beim Säugling nach Stillen mit Salvarsanmilch als Endotoxinwirkung aufzufassen?) G. Stümpke.
121 Disturbances in Tear Production. (Ueber Tränenstörungen und ihre Behandlung.) H. Bergemann.
122 Diagnosis of Masked Diphtheria in Children. (Zur Diagnose der larvierten Diphtherie im jüngeren Kindesalter.) E. Blochmann.
123 How to Avoid Operative Pneumothorax. (Ueber die Methoden zur Beseitigung der Pneumothoraxgefahr.) F. Lotsch.
124 Apparatus for Artificial Respiration: the "Pulmotor." (Maschinelle künstliche Atmung.) O. Roth.

116. **Diagnosis of Arteriosclerosis of the Legs.**—The importance of detecting and locating arteriosclerotic changes in the vessels of the legs in diagnosing intermittent claudication and similar affections is emphasized by Rosenbusch. He applies the Strauss turgosphygmograph at different points along the leg. This records the volume of the pulse-wave and thus shows at a glance the vessels or the segments of the vessels which are functioning defectively. It is able to reveal findings in this line at points inaccessible to palpation, and at all points is far more reliable than the latter, pointing out the portions of the vessel which can be relied on to do normal work.

118. **The Meiostagmin Reaction in Cancer.**—Leidi reports positive findings with the Ascoli technic in 80 per cent. of twenty cancer patients tested and in less than 8 per cent. of twenty-four patients with other diseases.

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 10, XLI, No. 26, pp. 897-928

125 Definition of Hysteria. A. Maeder.

Deutsche medizinische Wochenschrift, Berlin

September 14, XXXVII, No. 37, pp. 1681-1728

126 *Surgery of Lungs and Pleura. (Beiträge zur Pleura-Lungenchirurgie.) M. Martens.
127 Treatment of Diphtheria. (Zur Diphtheriebehandlung.) F. Hoesch.
128 *Treatment of Old Congenital Dislocation of the Hip-Joint. (Zur Behandlung der veralteten kongenitalen Hüftgelenksluxation.) E. Patschke.
129 Spontaneous Rupture of Uterus During Pregnancy. (Fall von spontaner Uterusruptur in der Schwangerschaft.) F. Sieber.
130 Spontaneous Rupture of Uterus After Classic Cesarean Section. (Fall von Uterusruptur nach vorangegangenem klassischen Kaiserschnitt.) P. Schick.
131 Specific Stimulation of Organs Producing Antibodies by Infectious Diseases. (Spezifische Stimulation der Antikörper bildenden Organe bei Infektionskrankheiten.) H. Lippmann.
132 Action of Liver Autolysis on Tuberkulin. (Versuche über die Einwirkung der Leberautolyse auf Tuberkulin.) F. Ditthorn and W. Schultz.
133 Examination of Sputum. (Zur Untersuchung des Tuberkuloseverdächtigen Sputums.) M. Nemmser and E. Martos-Lissowska.
134 Enrichment of Typhoid Bacilli in Water. (Ueber Anreicherung von Typhusbazillen in Wasser.) Lemke.
135 *Modifications of Babinski and Oppenheim Reflexes and Calf Phenomenon. (Ueber Modifikationen des Babinski- und Oppenheim-Reflexes und ein neues Fussphänomen—Wadenphänomen.) E. Trömner.
136 *Severe Toxic Symptoms After Intravenous Injection of Salvarsan and Means to Avoid Such. (Ein Fall schwerer Intoxikation im Anschluss an eine intravenöse Salvarsaninjektion, nebst weiteren Bemerkungen über die Entgiftung dieser letzteren.) T. v. Marschalko.
137 Salvarsan in Kala-Azar. (Therapeutischer Wert des Salvarsans bei Kala-Azar.) A. Christomanos.
138 River Steamboat Trips from Therapeutic Standpoint. (Die Binnen-Dampfschiffahrt als Heilmittel.) Mulert.
139 Hygiene in China. (Einige hygienische Prinzipien im Volksleben der Chinesen.) R. Baron Budberg.

126. **Pleura and Lung Surgery.**—Martens reports a number of successful operations on the lungs or pleura such as were undreamed of before the introduction of the differential pressure procedures. Among them is a case of chondrosarcoma successfully removed from the anterior chest wall and pleura close under the clavicle. The defect left after excision of the focus was closed with a large flap drawn around from the axilla and mamma, with which the lung was directly covered after the lung had been sutured to the edge of the defect all around. In another case he yielded to the appeal of a patient and removed a recurrence of a mammary cancer in the chest wall after the breast had been removed for recurrence of a primary tumor in the mamma, the tumor alone having been merely excised six months before. As a rule he refrains from such operations for recurring cancer in the chest and in this case the patient succumbed not long after to recurrence elsewhere. But the operation proved comparatively simple and easy, a large portion of the sternum and of three ribs being cut out with shears, leaving the lungs, pericardium and pleura exposed. He sutured the lung to the edges of the defect and twisted the remaining mamma around to close it. Healing was complete so that the patient was dismissed in twelve

days. In another case he resected part of two ribs to locate a bronchiectatic cavity in the lungs. When found he did not attempt to evacuate it, but sutured the pleura again and then evacuated the cavity by puncture with the actual cautery. He had a similar success in another case in which he opened into the cavity with the actual cautery, finding it at a depth of 5 cm. from the surface and 13 cm. in extent. He discusses the various technics for differential pressure, his work having been done mostly with the Brat-Schmieden positive pressure mask method.

128. **Old Congenital Dislocation of the Hip.**—Patschke reports the successful correction of congenital dislocation of both hip joints in a woman of 26. He scooped out a new cavity for the head but broke off the head in fitting it into the new cavity. The neck stump answered every purpose, however, and the functional use of the limb was restored. A similar operation was then done on the other hip joint six months after the first and without a fracture this time, so the patient was restored to practically normal gait and endurance. Her deformity had not caused her much disturbance till her eighteenth year, so she had never consulted a physician on account of it, but after that year she became unable to walk and no benefit was derived from long systematic courses of medical and orthopedic measures.

135. **Modifications of the Reflexes and the "Calf Reflex."**—Trömner has been examining the reflexes in twenty cases of recent nervous disease and in forty cases of long standing, and tabulates the compared findings. He remarks that it is generally possible to elicit the Babinski sign by the usual technic, but in dubious cases he applies a stronger method, pressing with a rapid hard pressure in the middle of the arch of the foot, below the ball of the great toe. This not only entails extension of the great toe but possibly also flexion of the foot, knee or thigh, or all together, in the pathologic cases. Sometimes the reflex followed when the foot was thus grasped firmly; in others it occurred only when the pressure was abruptly released. This Babinski-pressure phenomenon is more constant and more sensitive than the ordinary Babinski or Oppenheim signs and it is pathognomonic, he asserts, for foci above the lumbar region and it is less liable to be misinterpreted while it needs no instrument except a firm hand grasp. He has also found that the easiest way to induce the Oppenheim phenomenon is by applying strong brief pressure to the inner margin of the tibia, at a point between the middle and lower thirds. He presses forcibly with his thumb, the other fingers grasping the outer edge of the tibia, and the great toe is extended while the knee and hip joints flex—thus the same reaction as with the Babinski-pressure sign. The pressure must be made strong enough to hurt a little in the dubious cases. He also calls attention to what he entitles the "calf reflex," *Wadenphänomen*. It is a dorsal flexion of the foot when the hollow of the half-flexed knee is grasped from the inside and strong rapid pressure applied stroking downward as if to massage centrifugally the gastrocnemius muscle. The leg is held half bent and rotated outward, supported by the other hand. Dorsal flexion of the foot is the pathognomonic reflex; sometimes it may include flexion of the knee and hip-joints. In his study of the various reflex phenomena in forty cases of organic nervous affections of long standing and in twenty recent cases the calf sign was found in seventeen of the recent and in thirty-eight of the old cases, and the modified other phenomena in nearly as many, while with the usual technics the Babinski was elicited only in fifteen of the recent and only in thirty-three of the old cases and the Oppenheim only in twelve and eighteen, respectively. He was careful to make the tests allowing ample pauses between to exclude the influence of fatigue. The Bechterew-Mendel phenomenon can be elicited by merely tapping on the ball of the great toe or sole of the foot. This reflex occurred in five of the recent cases and in twenty-nine of the old, and the Rossolino reflex in the same number, coincident in all but one case. Trömner does not claim that the modifications he describes are new, but only emphasizes that the technic is simpler and more sensitive than those hitherto in vogue.

136. **Toxic Symptoms After Intravenous Injection of Salvarsan.**—The dose injected had been only 0.28 gm. but the signs of intoxication were extremely severe, including total anuria for over twenty-four hours. Study of them has, however, convinced Marschalko that the drug itself is not responsible for them but rather the vehicle in which it is administered as he explains in detail. He ascribes the disturbances to the germ content of the salt solution or distilled water. During the hot weather especially, a prolific microbian vegetation flourished in the water, and although it was killed by boiling the water, yet the germs persisted as albumin-containing bodies which are liable to induce serious intoxication if introduced directly into the circulation. The only means to avoid this is to redistil afresh the water to be used for intravenous injections, and then boil it for half an hour before adding the salt solution or drug. In his case the patient had chills, vertigo and high fever, vomiting and diarrhea, with great depression. The symptoms gradually subsided so that by the fourth day he felt entirely well. In all his other 400 patients there was no reaction or it was moderate, passing over before nightfall.

Medizinische Klinik, Berlin

September 17, VII, No. 38, pp. 1445-1482

140 Problems and Outlook for Internal Medicine. (Ueber einige neuere Gesichtspunkte und Probleme der inneren Medizin.) H. Kämmerer.
141 Gonorrhea. (Unsere Resultate der Gonorrhoebehandlung.) N. Markus.
142 Habitual Vomiting of Infants. (Zur Therapie des habituellen Erbrechens der Säuglinge.) H. Hahn.
143 Influence of Miliary Tuberculosis on Chronic Myeloid Leukemia. J. Löwy.
144 Some Unusual Malformations. (Einige Fälle seltener Missbildungen.) J. Strauss.
145 Nerve Massage for Functional Neuroses. (Ziele und die Bedeutung der Nervenmassage für die Behandlung der funktionellen Neurosen.) A. Wiszwianski.
146 Physiologic Isolation of Parts of Plant Organism as Origin for New Plants and Restitution. R. Muschler.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXIII, No. 4, pp. 533-738. Last indexed October 14, p. 1329

147 Case of High Shoulder and Partial Hemiplasia. (Fall von angeborenem Schulterblatthochstand bei Hemiplasie der oberen Körperhälfte.) J. Reich.
148 •Perforated Gastric Ulcer and Behavior of the Neutrophil Leukocytes. (Das perforierte Magengeschwür und das Verhalten der neutrophilen Leukocyten.) M. Mannheimer.
149 •Mechanical Predisposition of the Apices of the Lungs and Development of Apical Tuberculosis. (Entstehung der Spitzentuberkulose.) A. Bacmeister.
150 •Modification of Sense of Taste with Tumors in Posterior Cranial Fossa. (Geschmacksstörungen bei Tumoren der hinteren Schädelgrube.) B. Scholz.
151 Pneumococcus Peritonitis. (Zur Kenntnis des typischen Krankheitsbildes der Pneumokokkenperitonitis.) F. Rohr.

148. **Leukocytosis with Perforated Gastric Ulcer.**—Mannheimer's experience with twelve cases, which he reports in detail, confirms the advantages of watching the curve of the neutrophil leukocytes as an index of the virulence of the inflammation and of the resisting powers of the organism after perforation of a gastric ulcer. The curve is not so regular as with appendicitis, as the hyperleukocytosis does not develop until the peritoneum begins to be inflamed. But this very fact, with others, makes the differential blood-count exceptionally instructive.

149. **Mechanical Predisposition of Lung Apex to Disease.**—Bacmeister reports the details of experimental research in which he succeeded in inducing an isolated tuberculous process in the apices in animals. Injection of cinnabar into the circulating blood and inhalation of soot both confirmed the fact of the impeded circulation and respiration in the apex, hampered by certain artificially induced mechanical conditions. He never succeeded in infecting the apex in animals by having them inhale infectious material, but by injecting the material into the blood he regularly and constantly induced a focus in the apex when the mechanical conditions had prepared a predisposition. The research reported confirms the etiologic assumption of the injurious influence of a rigid and confined upper part of the chest, and justifies chondrotomy or any other means aiming to restore normal mechanical conditions and put an end to the stenosis of the upper aperture.

150. **Disturbances in Taste with Brain Tumors.**—Scholz urges closer study of this subject, citing Funkenstein's case in which the combination of paralysis of the nerve of taste with paralysis of the auditory nerve, while the facial, fifth and glossopharyngeal nerves were intact, led unerringly to discovery of a tumor in the posterior cranial fossa. He reports a case from his own experience in which a neurofibroma in the cerebellopontine angle had induced, besides the usual symptoms, paralysis of the taste in the regions innervated by the intermedius. He discusses the anatomy of the nerves involved, with a diagram.

Monatsschrift für Geburtshülfe und Gynäkologie, Leipsic

September, XXXIV, No. 3, pp. 273-396

152 *End-Results and Prospects of Treatment of Inherited Syphilis. K. Baisch.
153 Pituitary Extract and Digitalis in Obstetric Cases. (Pituitrin und Digitalis in der geburtshülflichen Praxis.) J. Hofbauer.
154 Hydatidiform Mole with Twin Pregnancy, One Twin Developed to Term. W. Falgowski.
155 Tuberculosis of Ovarian Tumors. (Zur Tuberkulose der Eierstocksgeschwülste.) T. Rosenthal.
156 *Operative Treatment of Chronic Inflammatory Tumors in Ovary or Tube. (Chronisch entzündliche Adnextumoren.) J. Schiffman and R. Patek.
157 Malignant Melanoma of the Vulva. N. Markus.

152. **Inherited Syphilis.**—Baisch urges that the puerperium is an excellent time for commencing treatment of syphilis and that apparently healthy women bearing syphilitic children will consent to treatment then who heedlessly disregard the necessity for it a few weeks later as they feel well. He has had a case of rupture of the uterus from syphilitic changes, which were also responsible in another case for premature separation of the placenta. He advocates salvarsan treatment of all syphilitic pregnant women and parturients, and reports thirty cases in which this was done during the puerperium. In three cases salvarsan treatment during the pregnancy was well borne and seemed to have a favorable influence on the offspring, all three being apparently free from syphilis, but the blood from the umbilical cord in one gave a weak Wassermann reaction. These three women had aborted at each preceding pregnancy.

156. **Operative Treatment of Chronic Inflammation in Ovaries or Tubes.**—Operative treatment was applied in only ninety-three of the 2,633 cases in this category at Wieden, 1902 to 1910. Three-fourths of these patients have been reexamined recently, after at least a year since the operation. The findings on reexamination teach that conservative treatment should be perseveringly applied but that if operative measures become necessary, the operation should be radical; conservative, half-way surgical measures cannot be relied on for a permanent cure.

Münchener medizinische Wochenschrift

September 12, LVIII, No. 37, pp. 1945-1992

158 Paroxysmal Tachycardia. H. E. Hering.
159 Electrocardiogram of Pulse with Regular Alternation of Weak and Strong Beats. (Elektrokardiogramm des Pulsus alternans beim Menschen.) G. Joachim.
160 *Diagnostic Importance of Emotional Instability of the Blood-Pressure. (Diagnostische Bedeutung der psychogenen Labilität des Blutdruckes.) P. Schrumpf and Zabel.
161 Kinematography of the Heart (Zur Herzkinematographie.) A. Weber.
162 *Normal and Premature Sensation of Satiety. (Normale und vorzeitige Sättigung.) E. Neisser and H. Bräuning.
163 *Specific Reactions with Cancer. (Ueber Tumorreaktionen mit bes. Berücksichtigung der Meiostagminreaktion.) A. Stammler.
164 *The Family of Patients with General Paralysis. (Untersuchungen an Kindern und Ehegatten von Paralytikern.) F. Plaut and M. H. Göring.
165 *Rhizotomy Below Lumbar Enlargement of Spinal Cord. (Modifikation der Försterschen Operation, Resektion der Wurzeln am Conus medullaris.) M. Wilms and Kolb.
166 Night Treatment of Acute Gonorrhea. (Die Nacht-Behandlung der akuten männlichen Gonorrhoe.) E. Kuhn.
167 Treatment of Mercuric Chlorid Poisoning. (Therapeutische Versuche bei Sublimatvergiftung.) W. Meyerstein.
168 Dosage in Roentotherapy. (Dosierung der Röntgenenergie.) T. Christen.
169 Vasoconstricting Substances in Serum in Rachitis, Tetany and the Exudative Diathesis. H. and L. Hirschfeld.

160. **Diagnostic Importance of Emotional Fluctuations in the Pulse.**—Schrumpf and Zabel report experiences which show that the rigid vessels in arteriosclerosis are unable to compensate the emotional changes in the heart-rate, and consequently the radial pulse reflects them. Any fluctuations in the diastolic blood-pressure of psychic origin, which amount to more than 15 per cent. of the systolic fluctuations, testify to the presence of arteriosclerosis.

162. **Premature Sensation of Having Eaten Enough.**—Neisser and Bräuning have had some patients who grew thin because their appetite was appeased with a few mouthfuls of food and they did not care to eat more and consequently were starving although their appetites were good. Experimental and clinical research was undertaken to determine the mechanism of the feeling of satiety, and they found that it depended on the pressure within the stomach. This pressure may be from the food itself or from the peristaltic contraction of the stomach or from pressure from without as from a tight corset. The peristaltic contractions of the stomach are started by the act of swallowing; they found that by pouring the food into the stomach through a tube, thus avoiding swallowing there was no sensation of satiation until much later than when a much smaller amount of fluid had been swallowed naturally. The research reported indicates that there is the same delicate and constant connection between the motor functioning of the mouth and of the stomach as between the secretory functioning of mouth and stomach to which Pawlow called attention. Besides laying aside the corset, some suggestion was needed to train the young girls to eat normally and enjoy the entire meal with appetite instead of being satisfied with a few mouthfuls, but this once accomplished they rapidly took on weight. None of his girl patients was unduly nervous or hysteric. In another group of patients the early satiation was traced to excessive tonicity of the stomach walls and hasty eating. When they were trained to eat more hygienically they soon became normal eaters. He found it a help in treating these patients and others with various stomach troubles, to have them recline while taking their meals. This seemed to alter the pressure within the stomach in some beneficial way.

163. **Specific Cancer Reactions.**—Stammler has been testing the various ferment reactions that have been proposed as an aid to the diagnosis of cancer, and has found that the meiostagmin reaction is frequently a most valuable aid for differentiation of dubious conditions. He examined the serum of 340 patients with various affections, including 120 with certain cancer, and obtained a positive reaction in 73 per cent. of the cancer cases. At the same time he warns that a positive reaction was obtained also in 20 per cent. of the patients with other affections, mostly diphtheria and scarlet fever, diabetic gangrene and enlargement of the prostate. The reaction, however, was never positive in cachexia of non-cancerous origin. [The technic for the meiostagmin reaction was described editorially in THE JOURNAL, May 28, 1910, page 1790.] Stammler in studying these various reactions happened on another which he thinks may prove of value. It proved positive in 82 per cent. of the 100 tumor patients and only in fourteen of the 130 patients with other affections examined. The technic is the same as for the meiostagmin reaction, only both serum and antigen are used less diluted. The mixed fluids are set in the autoclave for six hours and then set aside to cool gradually. With the cancerous serum precipitation soon occurs, leaving the supernatant fluid clear, while the precipitation with non-cancerous serum is very slight and the fluid persists turbid. He used an extract of a recently excised liver carcinoma, adding to 2 c.c. of the extract dilution 0.1 or 0.5 c.c. of undiluted serum. The findings were identical with this and the meiostagmin test. All the various reactions that he reviews are traceable to the presence of a special ferment in malignant growths.

164. **The Families of Paralytics.**—Plaut and Göring were amazed to find that the families of fifty-four persons known to have general progressive paralysis had so seldom been suspected of syphilis, and yet many of the consorts and children gave a positive Wassermann reaction and some of them presented unmistakable evidences of syphilis. They urge the necessity for investigation of conditions in the families of persons known to have syphilis, as an important task which physicians should not shirk.

165. **Modified Technic for Rhizotomy.**—Wilms and Kolb severed the sensory nerve fibers in the conoid distal end of the spinal cord, instead of the typical Dana or Förster operation, in three cases and commend this technic as liable to prove equally effectual, while it is a much less serious operation than the original technic. They describe their cases and analyze the anatomic conditions in the conus medullaris. The first patient had Little's disease and slight but decided benefit was apparent even from the timid tentative operation. The second patient was a man of 30 with spastic paralysis of both legs and great benefit was derived although a tendency to ataxia had to be overcome. This patient had bladder disturbances with retention of urine, and these were not modified by the operation. In the third case the contractures were due to athetotic spasm and the functional result was less good. The operation is so simple that scarcely ten minutes were required for it after the dura had been opened.

Therapie der Gegenwart, Berlin

September, LII, No. 9, pp. 385-432

170 Clinical Importance of the Electrocardiogram. H. E. Hering.
171 *Comparative Frequency of Differences in the Right and Left Radial Pulse. (Häufigkeit von Pulsunterschieden an der Radialis zwischen rechts und links.) Könnecke.
172 *Hemoptysis and Its Treatment with Digitalis. (Entstehung des Lungenblutens und seine Behandlung mit Digitalis.) C. E. Focke.
173 Means to Keep Milk Cool and Free It from Fat. (Kuhlhaltung der Säuglingsmilch. Entfettung der Säuglingsmilch.) W. Klink.
174 Dose of Roentgen Rays for Deep Exposures. M. Fraenkel.

171. **Differences in the Radial Pulse Right and Left.**—Könnecke examined 500 persons, sick and well, and found the radial pulse alike on both sides in only 56 per cent.; in 2.5 per cent. there was marked difference. These differences in the pulse were traceable in some cases to purely local or slight central causes with otherwise intact vascular system. His practical conclusion is that the radial pulse on both sides should be tested and not one alone. The left pulse was the stronger in 14 per cent. of 455 right-handed individuals and in 43 per cent. of 21 ambidextrous. With persons over 45 the difference in the pulse is generally due to arteriosclerosis of the orifices of the arteries, if no peripheral changes in the artery wall can be detected.

172. **Digitalis in Treatment of Hemorrhage from the Lungs.**—Focke analyzes forty cases from his own experience and a number on record, his conclusions being that hemorrhage from the lungs is by no means due to tuberculosis in as large a proportion of cases as is generally assumed. Tuberculosis could be incriminated in only seven, that is, in a small per cent. of his cases. In three other cases there was pronounced anemia, in another furunculosis, in another nephritis. In twelve others there was a severe cough, from acute catarrh in five, with congestion in the head in one. In seven other cases there was chronic irritation of the air passages in elderly persons with asthma, bronchial ectasia or arteriosclerosis. The hemorrhage occurs almost invariably from local congestion, inducing diapedesis; rupture of a vessel is very rare. As the diapedesis occurs only from local stasis, treatment should aim to regulate the circulation in the region and for this nothing is so effectual as digitalis. The hemoptysis may not be threatening but it always frightens the patient and his family and it may run into something threatening, so that treatment should be instituted at once. The proper measures are those that put an end to the causal local disturbance in the circulation and prevent its recurrence, namely, by dietetic and medicinal measures, keeping the bowels open and regulating the circulation with digitalis. He generally orders for adults an infusion of the leaves.

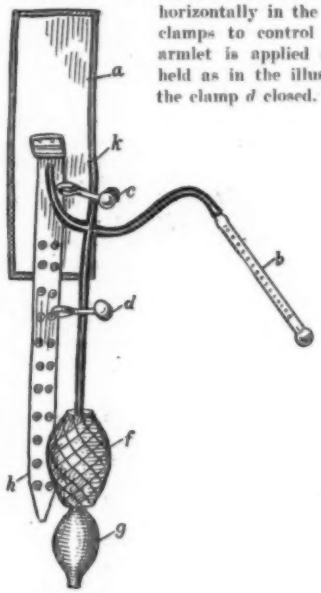

Figure 1.

Virchows Archiv, Berlin

July, CCV, No. 1, pp. 1-160

175 Regenerative and Blastomatous Formation of Tissues. C. S. Engel.
176 Solid Ovarian Tumor Originating in the Three Layers of the Derma. (Zum Studium der festen Tridermome des Eierstockes.) E. E. Franco.
177 Case of Multiple Cysts in Appendix. T. Sissojeff.
178 Finer Structure of the Giant Cells in Gummas and Sarcomas. T. Wakabayashi.
179 Human Colostrum. F. Berka.
180 Mucoid Connective Tissue. E. Björling.
181 Iron Metabolism in Pernicious Anemia and Leukemia. K. Kennerknecht.
182 Influence of Adrenals on Depression of Blood-Pressure. W. Nowicki.
183 Unequal Bifurcation of Little Finger. H. J. M. Schoo.
184 Anomalies of Pulmonary Veins and Biocular Heart. R. Schröder.
185 Enlargement of Spleen with Experimental Pneumococcus Infection. G. Porrini.
186 Valves of the Femoral and Saphenous Veins in Relation to Sapheno-Femoral Anastomosis for Varices. E. Hesse and W. Schnack.

Wiener klinische Wochenschrift, Vienna

September 14, XXIV, No. 37, pp. 1295-1322

187 Complement Binding in Scarlet Fever and Measles. (Komplementbindung bei Scharlach und Masern.) J. Kappel.
188 Malformation of Scapula. (Ueber die skapholde Form des Schulterblattes.) V. Kollert.
189 Bradycardia with Jaundice. (Ueber die Pathogenese der ikterischen Bradykardie.) S. D. Danielopolu.
190 Poisoning from Contact with Certain Plants. (Phytonosen.) F. Kanngiesser.
191 *Simplified Sphygmomanometer. (Das neue Modell meines Blutdruckmessers.) M. Herz.

191. **Simplified Sphygomanometer.**—Herz has modified his blood-pressure indicator so that the pressure is regulated practically automatically while the entire attention of the operator can be concentrated on his palpation of the pulse. Even with this change in his original hemodynamometer, it is still, he asserts, the smallest and simplest of all apparatus of the kind in practical use. Fig. 1 shows at *a* the rubber armlet and leather strap. *b*; *b*, the manometer tube, is held horizontally in the patient's fingers, and *d* and *c* are the two clamps to control the supply of air from the bulb. The armlet is applied and strapped tight, the manometer tube held as in the illustration, the mercury at zero. Then with the clamp *d* closed, the ball *f* is pumped as full of air as possible, until its net is stretched to the utmost. Then the operator feels for the radial pulse with his left hand and with his right opens clamp *d*. The air penetrates very slowly into the cuff and the mercury slowly moves toward the farther end of the tube. The moment that the pulse disappears, the clamp *d* is closed again, so that the communication between the bulb and the cuff is again interrupted. Opening then the clamp *c* permits the escape of the air in the cuff and manometer, and the measurement can then be taken again. The

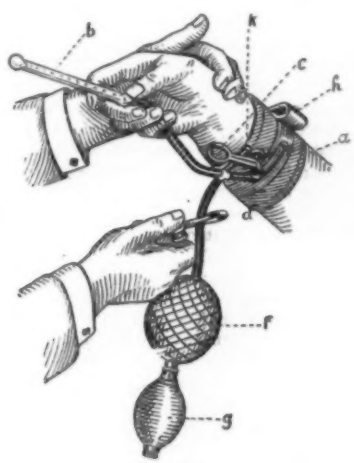

Figure 2.

special feature of the apparatus is that the stout-walled ball *f* serves as a reservoir for the compressed air. It holds enough air for the measurement to be taken over again three or four times. The apparatus further permits recognition of the diastolic pressure by the lessening of the radial pulse. The apparatus is completely emptied by opening both clamps at once.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXVIII, No. 3, pp. 591-823. Last indexed September 2, p. 854

192 *Treatment of Asphyxia of the New-Born. (Zur Behandlung des Scheintodes Neugeborener.) B. S. Schultze. (Wiederbelebung asphyktischer Neugeborener.) R. Olshausen. (Behandlung des Scheintods Neugeborener.) W. Nacke.
193 Gestation in Rudimentary Cornu of the Uterus. (Zur Gravidität im rudimentären Uterushorn.) W. Beckmann.
194 Treatment of Eclampsia by Intravenous Injections of Extract of Leeches; Fourteen Cases. II. (Behandlung der Eklampsie mittels intravenöser Hirudininjektionen auf Grund von 14 Fällen.) F. Engelmann.
195 Early Development of the Ovum. (Zur frühesten Eientwicklung.) Heine and J. Hofbauer.
196 *Relations Between Difficult Delivery and Asphyxia of the New-Born and Persisting Psychic and Nervous Disturbances. (Zur Frage der Beziehungen zwischen asphyktischer und schwerer Geburt und nachhaltigen psychischen und nervösen Störungen.) W. Hannes.
197 Sterilization with Tetrapol. (Ueber Desinfektionsversuche mit Tetrapolgemischen.) O. Polano.
198 *Importance of Albuminuria in Pregnancy and Puerperium. (Klinische Bedeutung der Albuminurie in der Schwangerschaft, bei der Geburt und im Wochenbett.) O. Jaeger.

192. Treatment of Asphyxia of the New-Born.—Schultze replies to Ahlfeld's recent statement that the swinging method is too dangerous, and recapitulates the directions for this technic. He remarks that one of the principal blunders that beginners may make with this method is to swing the child so slowly that it bends over backward. This is best prevented by letting the last three fingers of both hands lie along the back, thus supporting the child in the upward swing. The swinging may be done so vigorously that the pelvic end goes too far and the spine is flexed in the chest region. This exposes the intestine to danger of being crushed, while it permits no or only imperfect expiration. Or the swinging may be so gentle that the pelvis sinks sideways. To avoid this, as soon as it is seen that the swinging was too gentle, the child should be dropped into the inspiration position or, if one is lively enough, take half a step forward; the resulting compensation in the shoulder and elbow region will catch the child still in the expiration position. Practice will teach the proper medium between too vigorous and too feeble swinging, so that the pelvic end of the child will sink gradually on its thorax. But this practice must not be done on the asphyxiated new-born child; that is too precious material for such exercises. They should be done on infant cadavers. He lays most stress on the supply of oxygen to the medulla oblongata which is attained by the swinging. At each swing about 20 c.c. of atmospheric air flows in and out of the lung, while the circulation of the blood is mechanically started at the same time. Without a supply of oxygen from without, as long as the circulation keeps up, the blood grows poorer and poorer in oxygen as it keeps yielding it up to the tissues. Nothing but a supply of oxygen to the medulla can revive its deeply depressed excitability. Although a hot bath may promote the circulation under other conditions, in the asphyxiated new-born child it can only aggravate the condition of the blood, augmenting its venous character. He regards the chilling of the skin as the best stimulus for the respiration when the child is only slightly asphyxiated. Only when the child does not breathe and cry after a few minutes of mild stimulation of the skin does he cut the cord, with as little loss of blood as possible, and then apply more vigorous measures.

Olhausen speaks a word in favor of blowing air into the lungs and also of letting a little blood escape from the umbilical cord in blue asphyxia when the symptoms seem to indicate that there is undue congestion in the inferior vena cava and right heart; the latter is not able to master its contents. He warns against too hasty and vigorous measures; the tender new-born must be treated differently from an older person or injury may result.

Nacke remarks that the Schultze swinging is probably done far too often and too much, but still the proper technic is rarely used. He wraps the child in a warm cloth, holding it across the back with the forefingers in the axillæ. He first dips the child in a hot bath, then in a cold, then rubs and if the heart is not working, massages the heart, and only when these fail does he swing it. He has found massage of the heart very useful, and thinks that the benefit from the swinging is due more to stimulation of the contractions of the heart than to stimulation of the respiration center. He percusses the heart region with four fingers of his right hand, thus tapping it elastically about three hundred times in a minute. The heart frequently revives after this even when no sounds had been perceptible from it with the stethoscope before.

196. Relations Between Difficult Delivery and Nervous and Mental Trouble Later.—Hannes has been investigating the present condition of 150 children born severely asphyxiated at the maternity at Breslau between 1893 and 1904. Also of a second series of 150 children delivered with forceps during the same period, and of a third series of 150 delivered spontaneously and normally. He sent a question-blank containing forty queries to the various families or filled it out himself from his knowledge of the children. The final conclusions from comparison of these groups are that difficult delivery has absolutely no influence on the nervous and mental condition of the child in later years unless there has been some direct injury of an organ, which is most exceptional. When the asphyxiated or forceps child survived the first week or so it developed thereafter the same as the normally born children, the proportion of cases of nervous or mental impairment being practically the same in each of the three groups, and the mortality in the first ten weeks being approximately the same. The data show further that the first-born children survive in much larger numbers than the children born to already large families.

198. Albuminuria During Pregnancy and the Puerperium.—Jaeger examined systematically the urine of 100 women during the last months of pregnancy and of 120 immediately after delivery. He found albuminuria in 70 per cent. of the pregnant women, and in 25 per cent. the albuminuria was of the orthostatic or lordosis type. Some latent bacterial influence is often responsible for the albuminuria and this influence may increase to actual direct injury of the kidneys during a later pregnancy or after delivery. He found tube-casts showing already pronounced injury of the kidneys in 11 per cent. With the lordosis type there were no tube-casts until after delivery. Albumin was almost invariably present in the urine during delivery and in larger amounts in primiparæ. Mechanical, toxic and infectious factors evidently are all involved in the albuminuria during pregnancy and childbirth, and also a constitutional predisposition on the part of the kidneys in the lordosis type.

Zeitschrift für Urologie, Berlin

August, V, No. 8, pp. 585-712

199 *Symptomatology, Diagnosis and Treatment of Horseshoe Kidney. (Hufeisenniere.) T. Rovsing.
200 Congenital Hydronephrosis. J. Verhoogen and A. de Graeuwe.
201 Transformation of Bladder Epithelium Into Secreting Cylinder Epithelium. (Umwandlung des Blasenepithels in sezernierendes Zylinderepithel.) O. Zuckerkandl.
202 Nephrotomy Supplementary to Pyelolithotomy and Importance of Latter in Prevention of Tardy Hemorrhage from the Kidney with Nephrolithotomy. D. Kusnetzky.
203 Non-Prostatic Retention of Urine in Senile Bladder. M. W. Ware.
204 Neuralgia in Bladder, Due to Varicocele. B. Maraini.
205 *Operative Influencing of Kidney Secretion. (Betrachtungen über die Nierensekretion.) P. Heresco.
206 Metastatic Carcinosis of the Ureters with Anuria with Nephritis on Same Side. F. Schlagintweit.
207 Traumatic Hydronephrosis Cured by Pyeloneostomy. H. Wildbolz.
208 Origin of So-Called Hypertrophy of the Prostate. G. Marion.

September, No. 9, pp. 713-800

209 Acute and Chronic Healthy Gonococcus Carriers. (Gonokokkenträger.) P. Asch.
210 Prostate Lipoids and Prostate Concretions. H. La Posner.
211 Syphilis of the Bladder. V. Pereschiwkin.
212 Congenital Diverticulum of the Urethra. J. P. Haberern.
213 Tuberculosis of Right Kidney Complicated with Right Parametritis; Peculiar Non-Tuberculous Changes in Left Ureter. J. Voigt.
214 Psychic Onanism. M. Porosz.

199. **Diagnosis and Treatment of Horseshoe Kidney.**—Rovsing has encountered four cases of horseshoe kidney in the last seven years and states that this deformity should be suspected whenever a patient complains of oppressive pain across the abdomen from one kidney region to the other, which subsides entirely when the patient reclines on his back; especially when the pain is brought on by physical exertion and becomes intensely exaggerated when the spine is bent over backward, and a tumor can be palpated from the right or left side in front back to the spine. In two other cases this syndrome was manifest except that the pain was not essentially augmented when the spine was bent over backward and the pain did not subside as the patient lay down on his back. In these cases an operation revealed that the trouble was merely a tuberculous affection of some mesenteric lymph-nodes. The pain from horseshoe kidney can be relieved only by repose and avoidance of all physical exertion. Where this is impracticable, operative measures are indicated, and in his third case Rovsing restored approximately normal conditions by cutting the kidney through the center, thus dividing it into two parts, each of which slid into its normal place and the patient thus has now two approximately normal kidneys. His attempt to do this through the ordinary slanting lumbar incision proved impracticable in his first two cases; in the third case he reached the kidney by the transperitoneal route, outside of the colon and duodenum, thus reaching the center of the single kidney by a rather roundabout road, separating and lifting the peritoneum, leaving intact the mesentery over the isthmus part of the kidney, as the mesentery at this point had evidently suffered from chronic pressure from the kidney. The isthmus in this case was a mass of true kidney tissue, and he avoided the otherwise inevitable copious hemorrhage by applying the liver resection technic, slowly squeezing the tissues in the grip of an angiotribe until the isthmus was reduced to a ribbon, and suturing on each side after this ribbon was cut. The results have been so excellent that he intends to propose this operation to the two other patients.

205. **Operative Influencing of Kidney Secretion.**—Heresco operated in 1903 in a severe case of diabetes insipidus in a youth of 15. He exposed the left kidney, which was loose and displaced, and massaged the renal plexus with kneading movements and then restored the kidney to place with the Guyon technic. His aim was to influence the functioning of the kidney as sympathectomy influences the tachycardia in exophthalmic goiter. The results surpassed all anticipations, the polyuria and polydipsia subsiding at once, and permanently over eight years to date. The skin and muscles bled profusely as they were incised, but as soon as the stem of the kidney was kneaded between the fingers all hemorrhage ceased. In 1909 a similar operation was done on another patient, a young man with diabetes insipidus and both kidneys displaced, but the results were not so striking as in the first case although the patient was much improved by the nephropexy on both sides and kneading of the renal plexus. Heresco has been studying on animals the influencing of renal secretion by manipulating the renal plexus, and emphasizes the necessity for abstaining from the slightest contact with the renal plexus when operating in cases with a tendency to anuria as any manipulating of the kidney has an inhibiting influence on its secreting function.

Zentralblatt für Chirurgie, Leipsic

September 16, XXXVIII, No. 37, pp. 1241-1272

213 *Arteriovenous Anastomosis for Angiosclerotic Gangrene. (Zur arterio-venösen Blutüberleitung bei angiosklerotischer Gangrän.) Wieting

216 *Staining of Living Tissues for Better Examination. (Ueber Färbung lebender Gewebe zu topographischen Zwecken.) Z. Slawinski.

215. **Arteriovenous Anastomosis for Angiosclerotic Gangrene.**—Wieting has performed this operation in five cases with excellent results, diverting the arterial blood into the venous system. These five were the only ones in his 150 gangrene cases in which the indications seemed to offer a prospect of success for this special technic, and the excellent outcome refutes, he declares, the theoretical objections that have been made against this operation.

216. **Staining a Fistula, Etc., to Aid in Diagnosing.**—Slawinski has found it of great assistance in excising a fistula passage to inject first a little saturated aqueous solution of methylene blue. The tissues take the stain and all the ramifications of the fistula are thrown into relief. The same technic is also useful at times to trace the course of normal passages. The stain is not washed away at once by the blood like bismuth paste.

Zentralblatt für Gynäkologie, Leipsic

September 16, XXXV, No. 37, pp. 1297-1328

217 *Serotherapy of Pregnancy Toxicoses. (Weitere Erfahrungen über die Behandlung von Schwangerschaftstoxikosen mit normalem Schwangerenserum.) A. Mayer.

218 Pituitary Extract as Oxytocic. (Pituitrin als wehentreibendes Mittel.) V. Bagger-Jorgensen.

219 Action of Epinephrin. (Zur Kenntnis der Adrenalinwirkung.) M. Schwab.

220 Glycogen Production in Uterus Glands. (Glykogenproduktion, eine physiologische Funktion der Uterusdrüsen.) L. F. Driessen.

221 Advantages of Local Application of Camphorated Glycerin in Gynecology. (Verwendung des Kampfers in der Gynäkologie.) R. F. v. Budberg.

217. **Serotherapy in Pregnancy Toxicoses.**—Mayer reports three additional cases with great benefit from three intravenous injections of 20 c.c. of serum from a normal pregnant woman. One patient was a young woman with severe eclampsia coming on during the sixth month of pregnancy. She was brought to the hospital in profound coma, no corneal reflex, pulse, 96 and tense; blood-pressure, 175; 7 per cent. albumin in the 80 c.c. of urine drawn from the bladder, but no distinct edema. The second injection was made after the twenty-first convulsion, the coma persisting unmodified except for transient rousing fifteen minutes after the first injection. In twenty minutes after the second there were signs of returning consciousness and after two hours another and the last convulsion followed, and improvement then rapidly progressed. A third injection was made at the seventh hour and spontaneous delivery followed in less than nine hours after the last convulsion. No other remedies were given. In another case the pregnancy intoxication manifested itself in numbness, itching or formication, all subsiding after an intravenous injection of 10 c.c. of serum from a normal pregnant woman. The third patient had severe and extensive herpes over the body which persisted for two months till delivery, and became much aggravated thereafter. An injection of 20 c.c. of normal pregnancy serum was then made, intramuscularly, as no site for an aseptic injection into a vein could be discovered. Improvement followed at once; two more injections were made before the whole body was freed from the herpes.

Gazzetta degli Ospedali e delle Cliniche, Milan

September 10, XXXII, No. 109, pp. 1157-1162

222 *Syphilis of the Stomach. (La sifilide dello stomaco.) A. Mathieu.

223 Perineal Prostatectomy. (Ipertrofia prostatica complicata a calcolosi vesicale e a restringimento uretrale trattata colla prostatectomia totale perineale.) O. Betti.

September 12, No. 110, pp. 1163-1170

224 Immunizing Properties of Desiccated Tuberculous Sputum. (Proprieta immunizzanti dell'espettorato tubercolare disseccato al calore.) G. Romanelli.

222. **Syphilis of the Stomach.**—Mathieu gives a historical review of syphilitic lesions of the stomach from Andral's two cases in 1838 to date, citing in particular from Fournier's work on syphilis of the stomach in which he described two cases of "false cancer of the stomach;" a tentative course of mercurial treatment was almost casually instituted before the contemplated operation to remove the tumor palpated in the stomach, and in a few months all trace of the cancer had disappeared. In other cases the syphilitic lesions simulated cancerous stenosis at the pylorus or induced ulceration or changes in the shape of the stomach resulting in hour-glass stomach. In one of the cases cited the pylorus was resected before the syphilitic nature of the lesion was ascertained. In other cases the syphilitic stenosis at the pylorus continued to progress notwithstanding vigorous antisyphilitic measures. In another case an actress with a history of syphilis had apparently a hemorrhagic gastric ulcer, rebellious to ordinary measures but healing at once under potassium iodid. The patient had a recurrence a few years later while travel-

ing but no physician would heed her requests for antisyphilitic treatment for the hemorrhagic ulcer, and she used up nearly her last remnant of strength in traveling back to her old physician who again banished all symptoms by vigorous potassium iodid treatment. In another case a man was on the point of having an operation performed to relieve the disturbances from an hour-glass stomach, the change in shape having apparently come on gradually. A tentative course of antisyphilitic treatment induced striking improvement, and the stomach subsided more and more toward normal shape. There was evidently gummatous induration in the stomach wall shriveling and drawing it up at this point and thus separating it into two parts. In every case of severe stomach disturbances in a patient supected of syphilis, the possibility of a syphilitic origin should be borne in mind. The coincidence of tertiary syphilitic lesions elsewhere should suggest a tentative course of specific treatment.

Policlinico, Rome

September 10, XVIII, No. 37, pp. 1161-1192

225 Operative Treatment of Aneurysm of the Aorta. (Sui tentativi di trattamento chirurgico degli aneurismi aortici.) V. Barnabo.

Riforma Medica, Naples

September 11, XXVII, No. 37, pp. 1009-1036

226 Aortic Disease in Persons Working in High Temperatures. (Per l'eziologia delle affezioni aortiche negli individui che lavorano in ambienti sovrariscaldati.) E. Tedeschi.

227 Tumor of Dental Origin in Lower Jaw. (Caso di tumore di origine dentaria del mascellare inferiore.) U. Zandonini.

Ugeskrift for Læger, Copenhagen

September 7, LXXIII, No. 36, pp. 1309-1336

228 *Quack Humbug. (Arkana og Kvaksalvere.) V. Lassen.

228. **Quack Humbug.**—Lassen tells of some of the most flagrant examples of quack practices in Denmark, especially the orthopedic appliances made by quacks and sold at high prices as a remedy for all kinds of diseases and deformities. He gives an illustration of one, for instance, a harness of leather and metal comprising a corset fitting from axillæ to thighs, broad bands strapped around the thighs, calves and ankles, the harness fitting over the shoulders and under each foot—this complicated and expensive contrivance was fitted to an adult man solely for the purpose of correcting a pes valgus. Lassen asserts that the medical profession ought to use its influence in particular to obtain legislation requiring that permission must be obtained from the authorities before electric belts and the like can be advertised or sold, and that physicians and quacks in other countries shall not be allowed to advertise in Denmark without special permit, and that no one shall be allowed to make or sell orthopedic appliances without special training and having passed an examination by a board comprising at least one physician and one skilled orthopedist, and that the appliances must be made only on a physician's prescription and only when the appliance-maker takes the measurements himself. Lassen did not ask the medical society before which he was speaking to vote on these suggestions but he did appeal to the society to call the attention of the public health authorities to the damage wrought by unscrupulous quacks with their ill-fitting, gangrene-inviting bandages and harnesses which they sell for osteomalacia and all kinds of affections, robbing the poor right and left. He knows of many a family where a cow was sold to buy the electric belt or harness. He adds that not a few unthinking persons will ascribe such efforts on the part of the profession to professional envy, but he says that the medical profession never competes with quacks in selling electric belts and the like, and that it certainly will be able to prove its disinterestedness in wishing to place the making of orthopedic appliances in the hands of those specially qualified for the work. Lassen mentions parenthetically a certain James Kidd who lives in America and advertises extensively in the Danish papers that he will cure all diseases gratis. Lassen has ascertained that Kidd sends the same advice to all who apply to him, regardless of the symptoms they describe, and, of course, he has to be reimbursed for the medicines he sends. A postman has told Lassen that over $100,000 is sent out to Kidd every year from Denmark.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Experimenta on the Processing of Persimmons to Render Them Non-Astringent. By H. C. Gore, Assistant Chemist, Division of Foods, Bureau of Chemistry. With an Introduction by David Fairchild, Agricultural Explorer, in charge Foreign Seed and Plant Introduction, Bureau of Plant Industry. Bulletin 141, U. S. Department of Agriculture, Bureau of Chemistry. Paper. Pp. 31, with illustrations. Washington: Government Printing Office, 1911.

A Practical Handbook of the Diseases of the Ear. For Senior Students and Practitioners. By William Milligan, M.D., Aurist and Laryngologist to the Royal Infirmary, Manchester, and Wyatt Wingrave, M.D., Pathologist (Lately Physician) to the Central Throat and Ear Hospital, London. Cloth. Price, $5 net. Pp. 596, with 293 illustrations. New York: Macmillan Co., 1911.

Paludism. Being the Transactions of the Committee for the Study of Malaria in India. Edited by S. P. James and S. R. Christophers. Issued, under the Authority of the Government of India, by the Sanitary Commissioner with the Government of India, Simla. Paper. Price, 2 rupees. Pp. 129. No. 3. July, 1911.

Proceedings of the Council Massachusetts Medical Society, October 5, 1910, to June 13, 1911, and Proceedings of the Society, June 13 and 14, 1911. A Directory of the Officers and Fellows, July 1, 1911. Paper. Pp. 96. W. L. Burrage, Secretary, 282 Newbury Street, Boston.

Conduct and Its Disorders Biologically Considered. By Charles Arthur Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases to Charing Cross Hospital. Cloth. Price, $3.25 net. Pp. 377. New York: Macmillan Co., 1911.

Fortschritte der naturwissenschaftlichen Forschung. Von Prof. Dr. E. Abderhalden, Berlin. Dritter Band. Paper. Price, 16 marks. Pp. 352, with 136 illustrations. Vienna: Urban & Schwarzenberg, 1911.

The Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Consulting Physician to Guy's Hospital. Ninth Edition. Cloth. Price, $6 net. Pp. 1121, with illustrations. New York: Macmillan Co., 1911.

New Patents

Patents of Interest to Physicians

996200. Attachment for douche pans. Nettie E. Betsworth, Los Angeles, Cal.
996560. Apparatus for purifying water by ozone. Charles S. Bradley, New York.
996561. Ozonizing and compressing process. Charles S. Bradley, New York.
996399. Fumigating apparatus. Daniel N. Calkins, Rochester, N. Y.
996215. Device for producing sulfur dioxid. Philbert Contamin, Paris, France.
996330. Liquid dropper. George B. Haines, Chicago, Ill.
996350. Hot water bottle. Dumont P. Lamb, Portland, Ore.
996424. Hypodermic syringe. Buchannan W. Parsons, Missoula, Mont.
996128. Power syringe. Joseph Payne and J. E. Knapp, Belmont, Mass.
996836. Surgical appliance. George A. Conrad, Houghton, Mich.
996924. Massaging implement. Raymond W. Griffith, Milwaukee, Wis.
996850. Combined ozone generator and inhaling apparatus. Robert P. Guiley, Akron, Ohio.
996759. Disinfectant. Richard Haertel, Basel, Switzerland.
996773. Stable perborate mixture yielding hydrogen peroxid. August Kinges and F. Sommer, Salbke-Westerhusen-on-the-Elbe, Germany.
997067. Surgical appliance. John W. Lange, Portersville, Cal.
996989. Shoe for flat-footed persons. Paul Langemann, Bremen, Germany.
997070. Bacteriological oven or incubator. Henry L. Lowe, Pittsburgh.
996679. Thermometer. Alfred Roesch, New York.
996797. Disinfecting device. Thad H. Rowland, Oberlin, Ohio.
997907. Dilator. William B. Dewees, Newark, N. J.
997914. Disinfecting device. Daniel N. Hitchcock, Kansas City, Mo.
997823. Speculum. Thomas H. Humphreys, Kissee Mills, Mo.
997514. Disinfecting compound and making. Joseph M. Schuts, Minneapolis.
997339. Ozonizer. Jan Steynis, New York.
997477. Process and apparatus for purifying solutions. Fritz Tiemann, Berlin, Germany.
998148. Surgical instrument. Robert A. Bachmann, Newoport, R. I.
998328. Massage implement. Charles Czinjak, Cleveland.
998000. Pill packaging machine. Otto E. Hermann and E. C. Dewitt, Chicago.
998310. Endoscope. Reinhold H. Wappler, New York.
41592. Self-recording thermometer case. Theodore H. Wurmb and R. Baumann, St. Louis.